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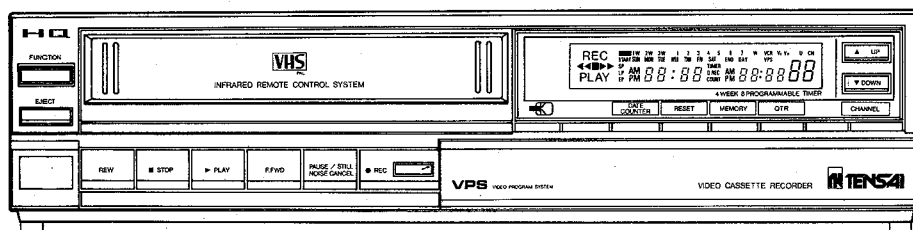


MODEL **TUR-1700**

HQ

Video cassette recorders bearing the "HQ" mark incorporate VHS high quality technology. Note that there is interchangeability with former VHS video cassette recorder.

Video Cassette Recorder



SERVICE MANUAL

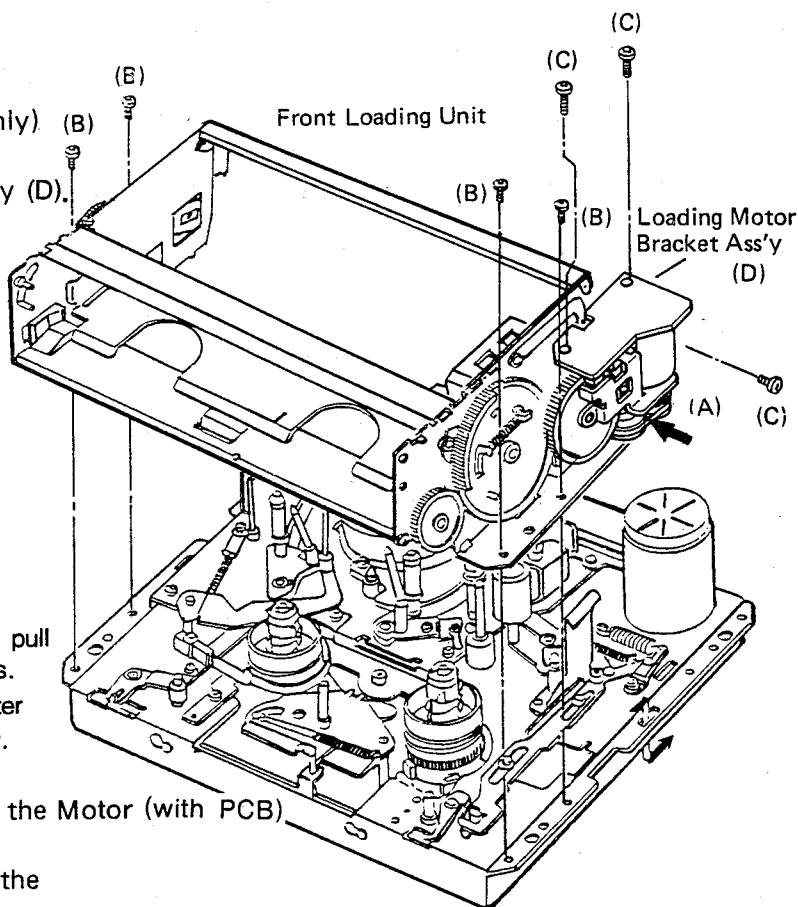
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DISASSEMBLY INSTRUCTIONS (DECK)

[1] FRONT LOADING UNIT

1. Remove 4 screws (B).
2. Take off the hook (A). (Right side only) (B)
3. Remove 3 screws (C).
4. Take off Loading Motor Bracket Ass'y (D).



[2] PHOTO SENSOR

1. Replacement of Lamp Holder Ass'y.

(Sensor Lamp)

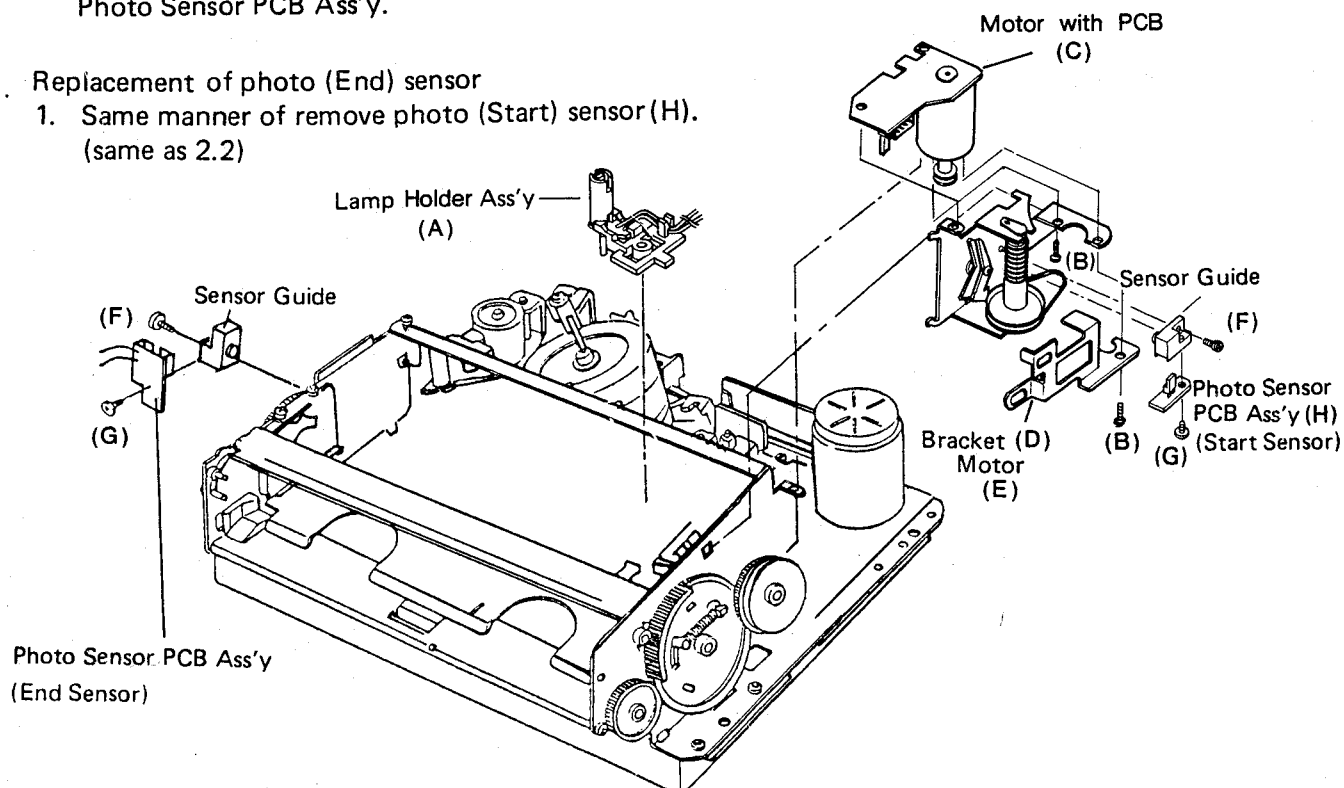
1. Hold lamp holder ass'y body(A) and pull up to remove the hook from chassis.
2. Turn the lamp holder ass'y to counter clockwise and take out holder ass'y.

2. Replacement of photo (Start) sensor

1. Remove 2 screws (B) and take off the Motor (with PCB) (C) and Bracket (D), Motor (E).
2. Remove 1 screw (F) and take off the Sensor Guide.
Remove 1 screw (G) and take off the Photo Sensor PCB Ass'y.

3. Replacement of photo (End) sensor

1. Same manner of remove photo (Start) sensor (H). (same as 2.2)



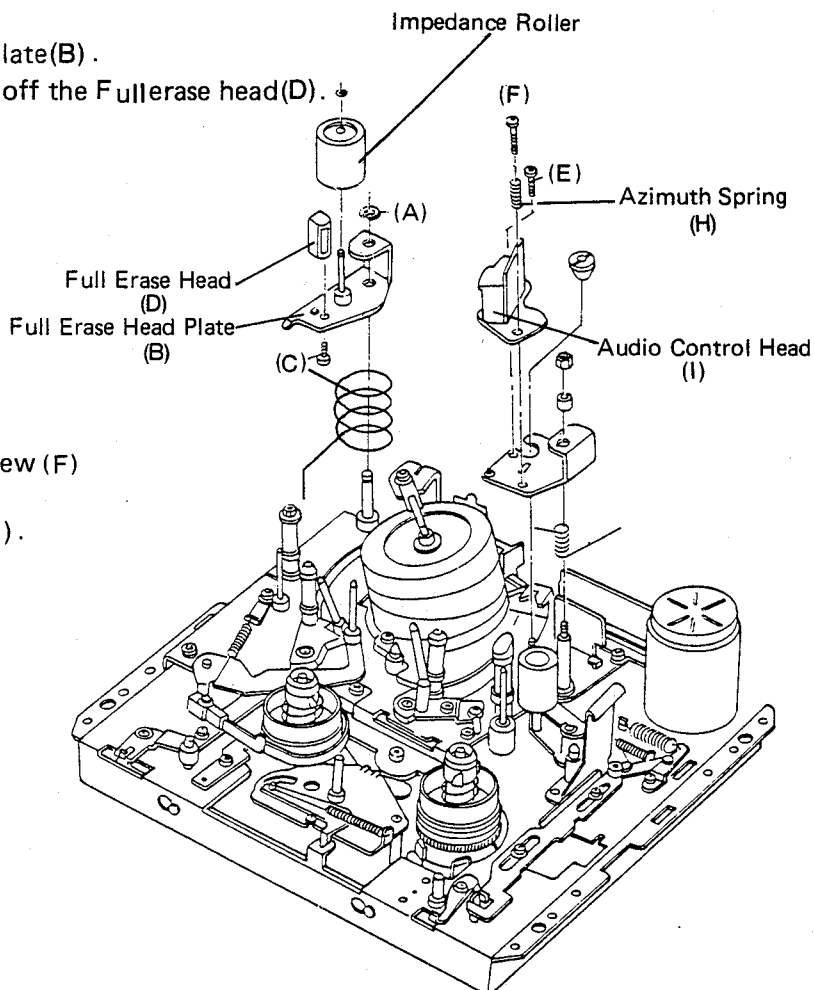
[3] FULL ERASE HEAD/AUDIO CONTROL HEAD

Erase Head

1. Remove E-ring (A).
2. Pull out the Full Erase head plate(B) .
3. Remove 1 screw (C) and take off the Fullerase head(D) .

Audio Control Head

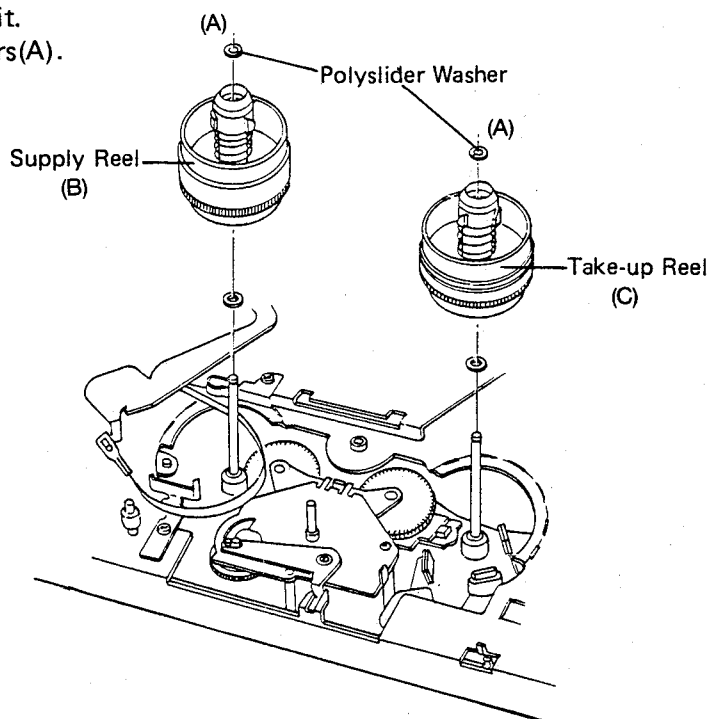
1. Remove 1 screw (E) and 1 screw (F) and azimuth spring(H) .
2. Remove audio control head(I) .



[4] REEL (SUPPLY & TAKE-UP)

(a) Remove front loading unit.

1. Remove polyslider washers(A).
2. Remove the reels(B), (C).



[5] GEAR HOLDER ASS'Y/CLUTCH

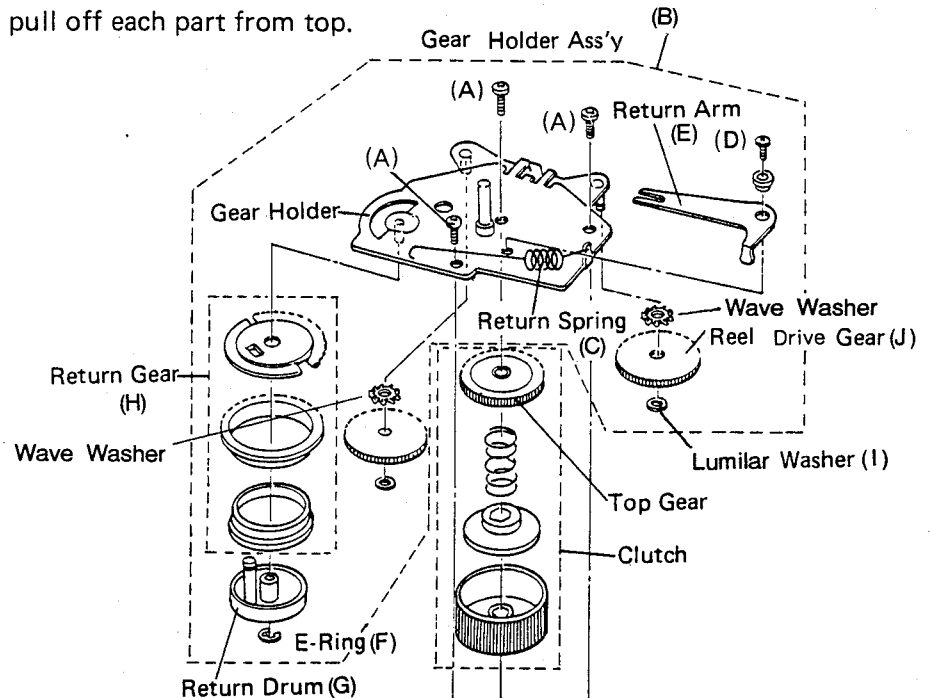
Gear Holder Ass'y

(a) Remove front loading unit.

1. Remove 3 screws (A), and gear holder ass'y(B).
2. Remove return spring(C).
3. Remove 1 screw (D) and return arm(E).
4. Remove E-Ring (F) and return drum(G)and return gear (H).
5. Remove polyslider washer (I) and then take off the reel drive gear (J) .

Clutch

Top gear is pressed to insert so pull off each part from top.

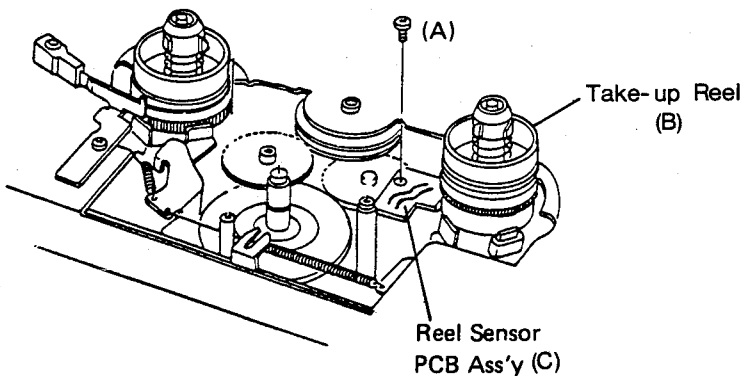
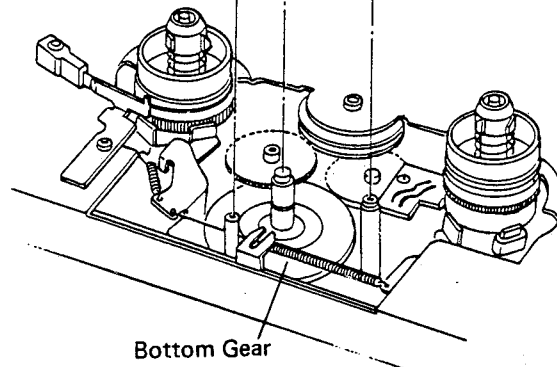


[6] REEL SENSOR

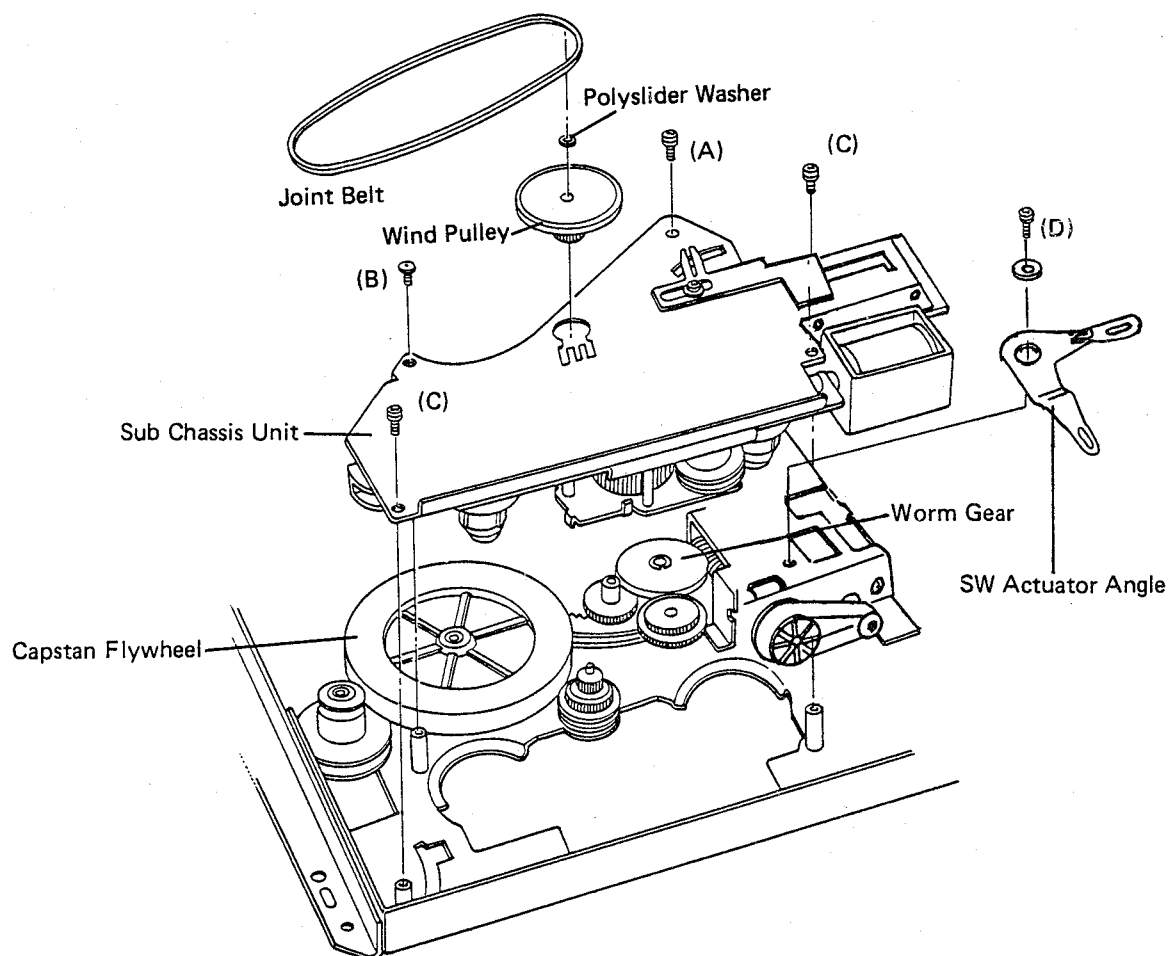
(a) Remove front loading unit.

(b) Remove gear holder ass'y.

1. Remove 1 screw (A).
2. Remove take-up reel(B).
3. Remove reel sensor PCB ass'y(C).



[7] SUB CHASSIS



Take out of Sub Chassis Unit

1. Turn the Capstan Flywheel clockwise more than three times. (Because the levers, etc. are set at neutral.)
2. Remove the Joint Belt.
3. Remove the Polyslider Washer.
4. Pull out the Wind Pulley.
5. Remove 1 screw (D) and take off the SW Actuator Angle.
6. Remove 4 mount screws from sub chassis. (Ax1, Bx1 Cx2)
7. Take out the Sub Chassis Unit.

Mounting of Sub Chassis Unit

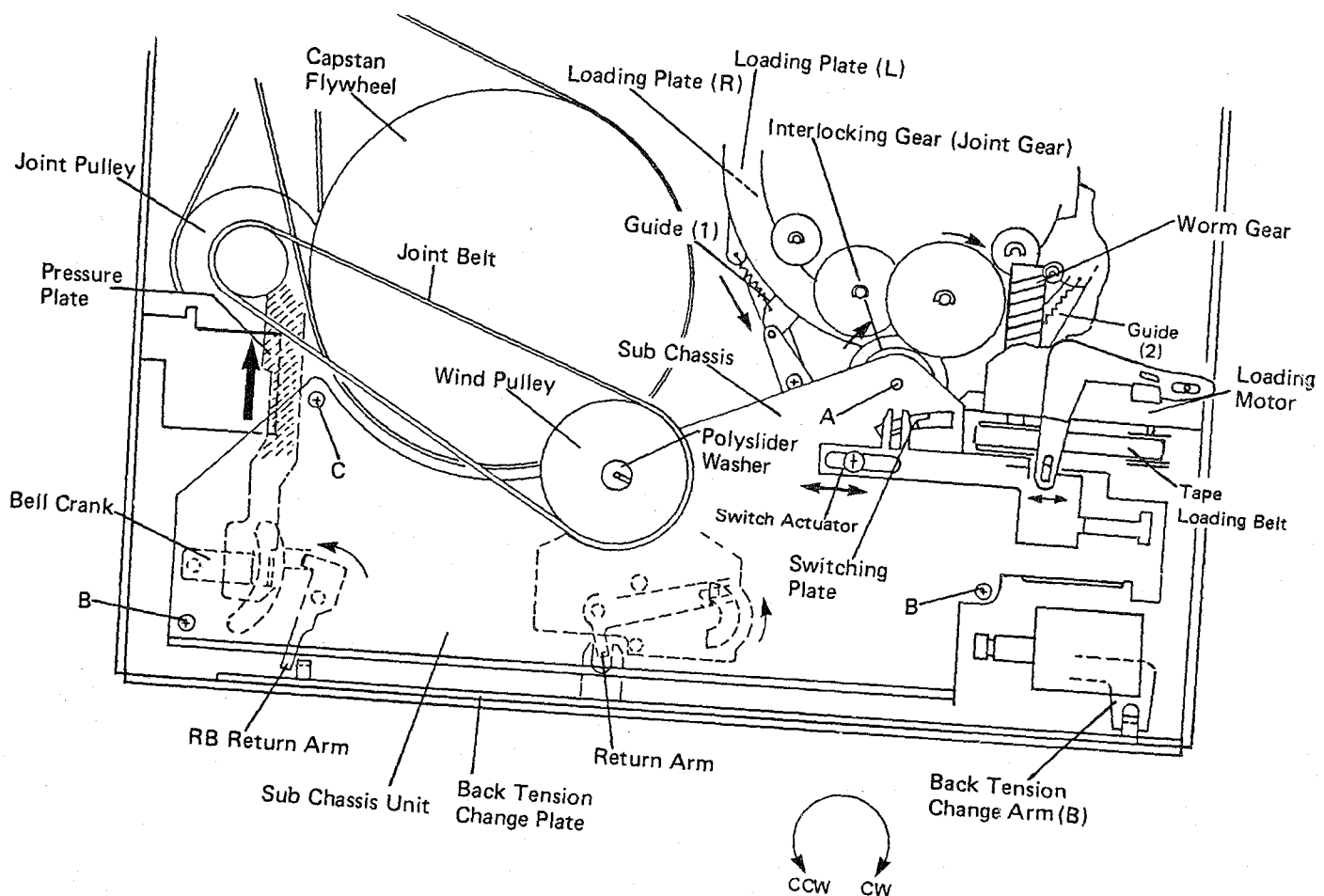
1. Turn the Return Arm in the direction of arrow mark.
2. Move the Back Tension Change Plate to the right direction extremely.
3. Turn the RB return arm to the direction of arrow mark extremely.
4. Turn the Loading Plates (L) and (R), and stop them at the position of hitting the wall of groove or just stop.

This work is done by turning the pulley of the Worm Gear jointed to the Loading Motor.

5. Turn the Interlocking Gear in the direction of arrow mark (counterclockwise) extremely.
6. Mount the Sub Chassis Unit. At this time, make the band brake of back tension fit to the supply reel. (Top side)
7. Shake the Switch Actuator to right and left in order to confirm the engagement of interlocking gear.
8. Slide the Pressure Plate in the direction of arrow mark in order to connect the Pressure Plate with the Bell Crank.
9. Mount the Sub Chassis Unit with 4 small screws.
(A x 1, B x 2, C x 1)
10. Insert the Wind Pulley.
11. Set the Polyslider Washer.
12. Mount the Joint Belt.
13. Confirm that the Return Arm is set to the calw of the Back Tension Change Plate.

It is OK that following two operations are confirmed by turning the capstan flywheel.

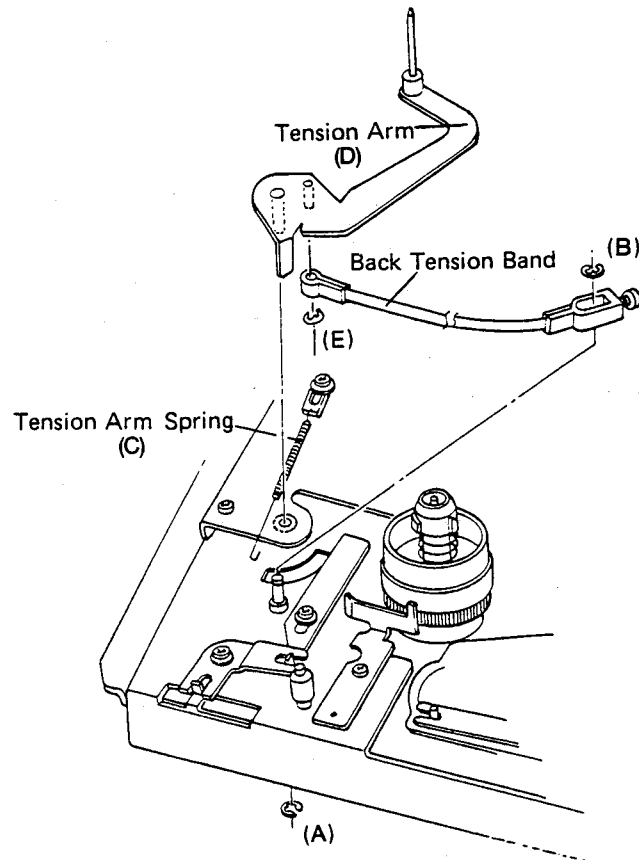
- (1) When the Capstan Flywheel is turned counterclockwise (CCW), the Back Tension Change Arm moves to the left.
- (2) When the Capstan Flywheel is turned clockwise (CW), the Back Tension Change Arm moves to the right.



[8] TENSION ARM ASS'Y

Remove front loading unit.

1. Remove E-ring (A).
2. Remove E-ring (B).
3. Remove tension arm spring (C).
4. Remove tension arm (D).
5. Remove E-ring (E).

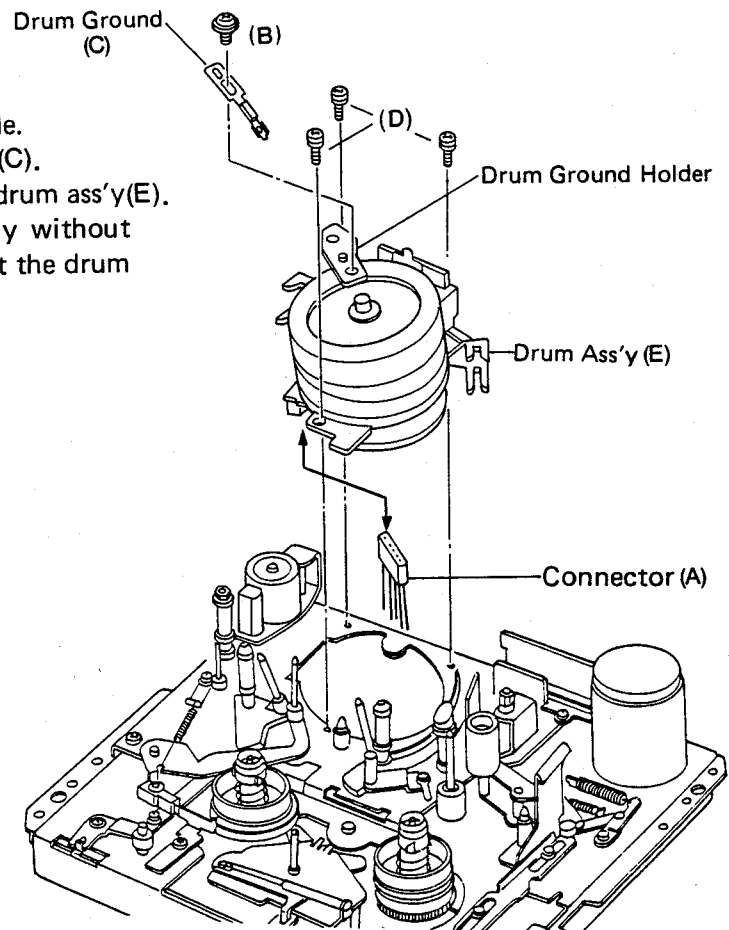


[9] DRUM ASS'Y

(a) Remove front loading unit.

1. Remove connector (A) from bottom side.
2. Remove a screw (B), and drum ground (C).
3. Remove 3 screws (D) and take off the drum ass'y (E).

Remark: Remove the drum ass'y carefully without any damage. Especially do not hit the drum ground holder.



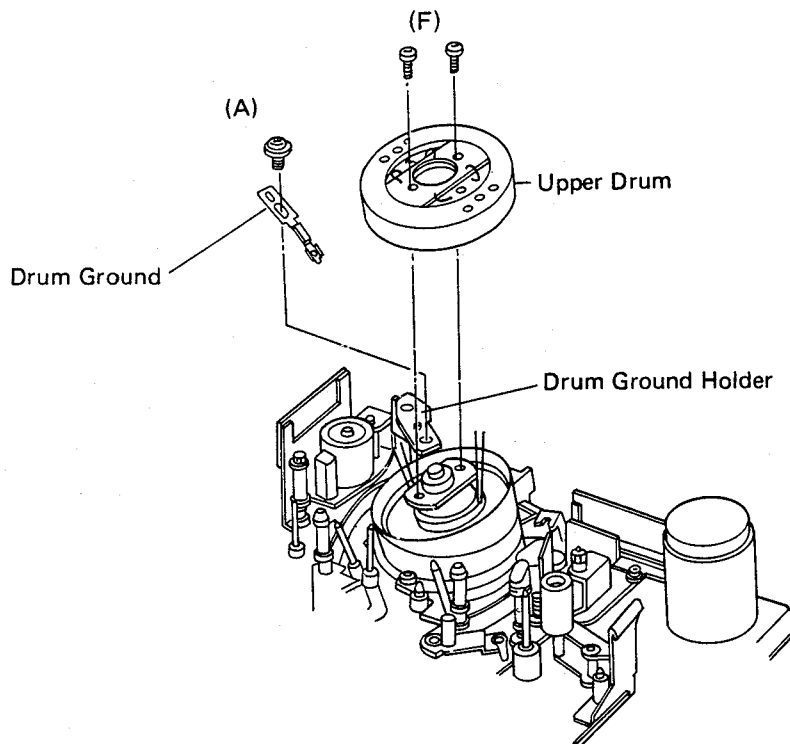
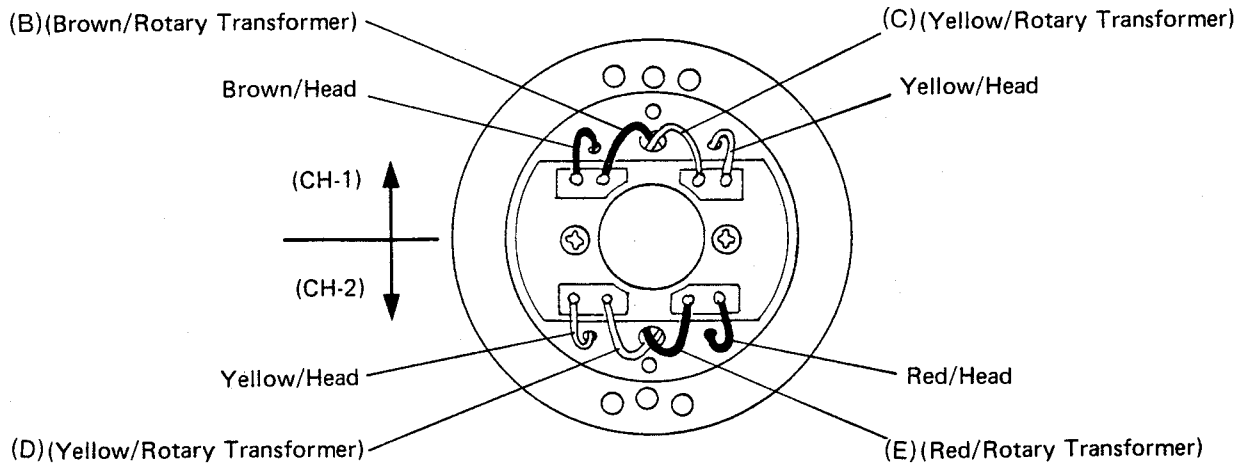
[10] UPPER DRUM

Remove front loading unit.

1. Remove 1 screw (A), and drum ground.
2. Resolder rotary transformer wires (B), (C), (D) and (E).
Do not unsolder head wires.
3. Remove 2 screws (F).

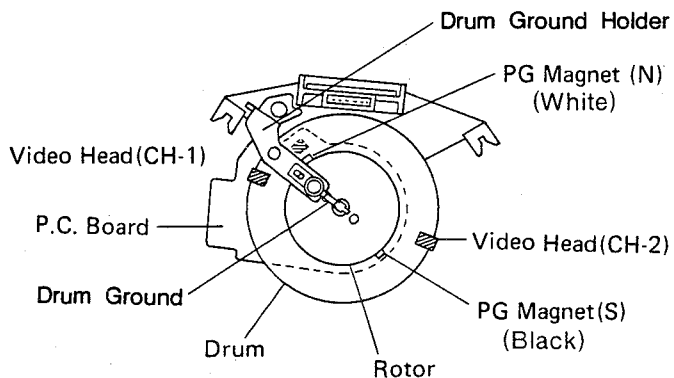
Remarks: 1) Use gloves and do not touch with bare finger or dust to drum face.

2) If the video head is defective, replace the complete upper drum with head.

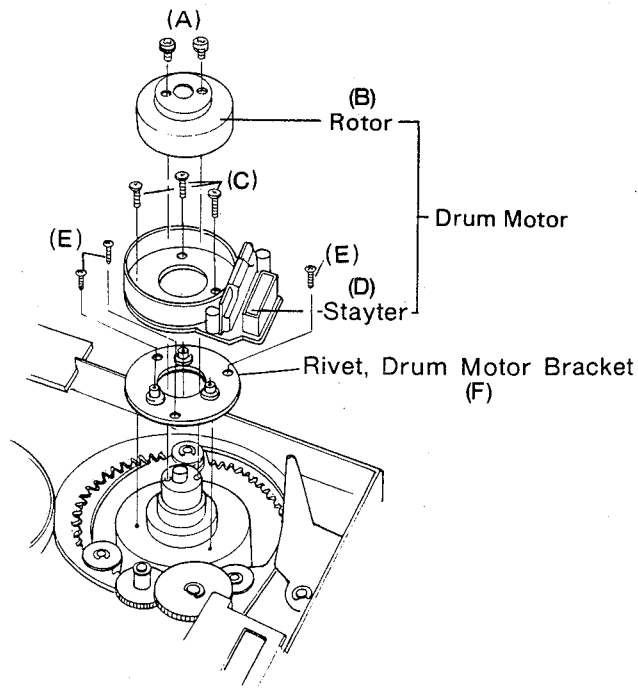


[11] DRUM MOTOR

1. Remove 2 screws (A).
2. Remove the rotor (B).
3. Remove 3 screws (C).
4. Remove stayter (D).
5. Remove 3 screws (E).
6. Remove Rivet, Drum Motor Bracket (F).

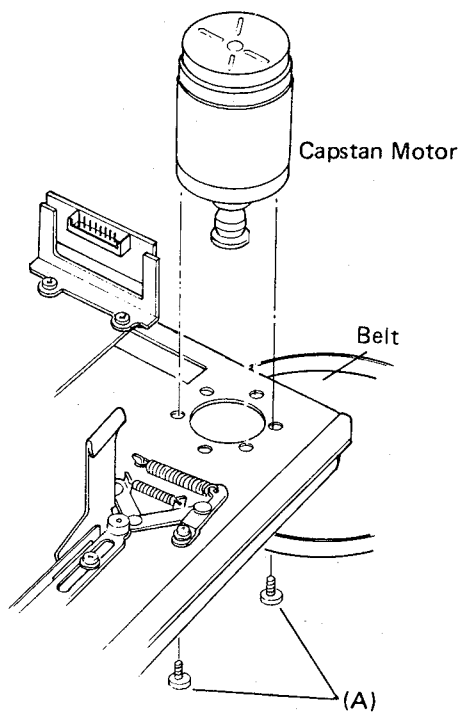


DRUM Ass'y (Top View)



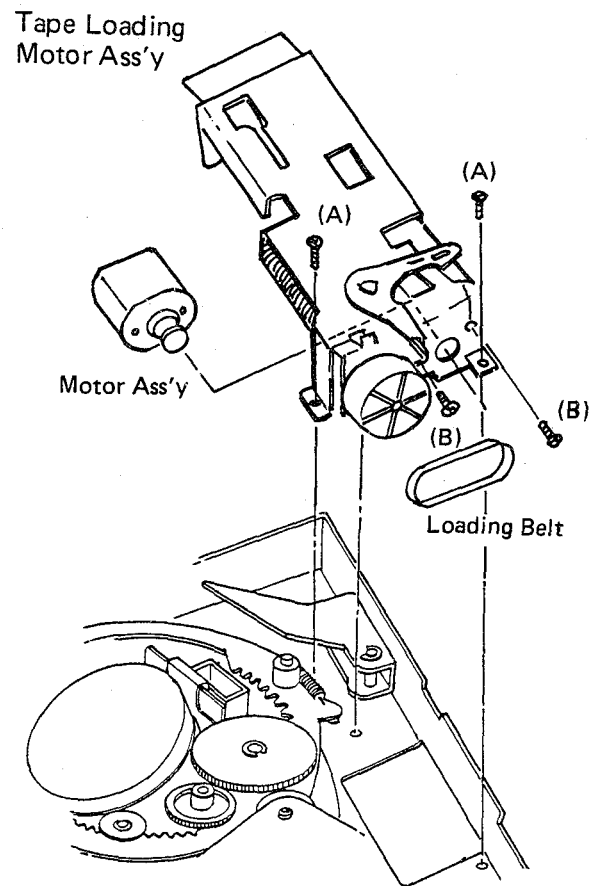
[12] CAPSTAN MOTOR

1. Take off the belt from capstan motor.
2. Remove 2 screws (A).



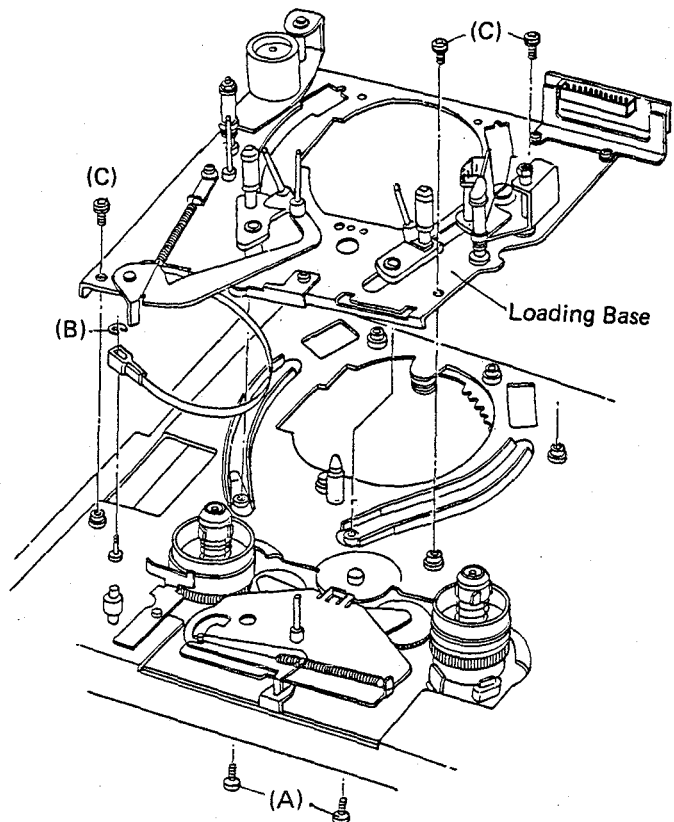
[13] TAPE LOADING MOTOR

1. Remove 2 screws (A).
2. Take off Tape Loading Motor Ass'y.
3. Take off Loading Belt.
4. Remove 2 screws (B) and take off Motor Ass'y.



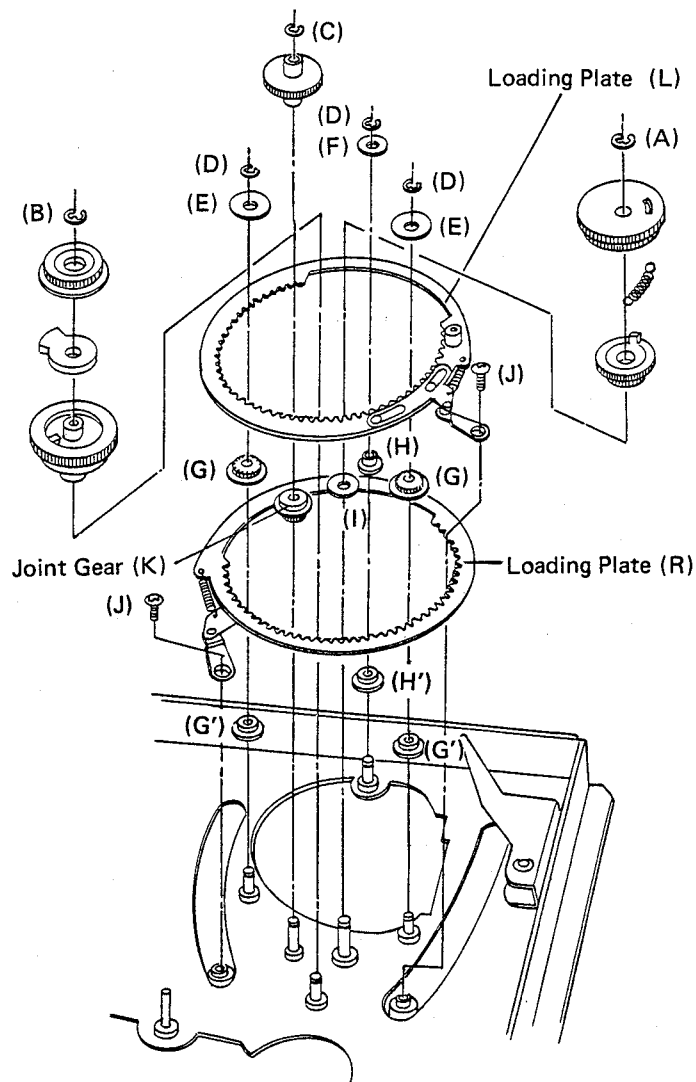
[14] LOADING BASE

1. Remove Motor Ass'y and Drum Ass'y.
2. Remove 2 screws (A) from bottom.
3. Remove E-ring (B).
4. Remove 3 screws (C).
5. Take off the Loading Base.



[15] LOADING GEAR

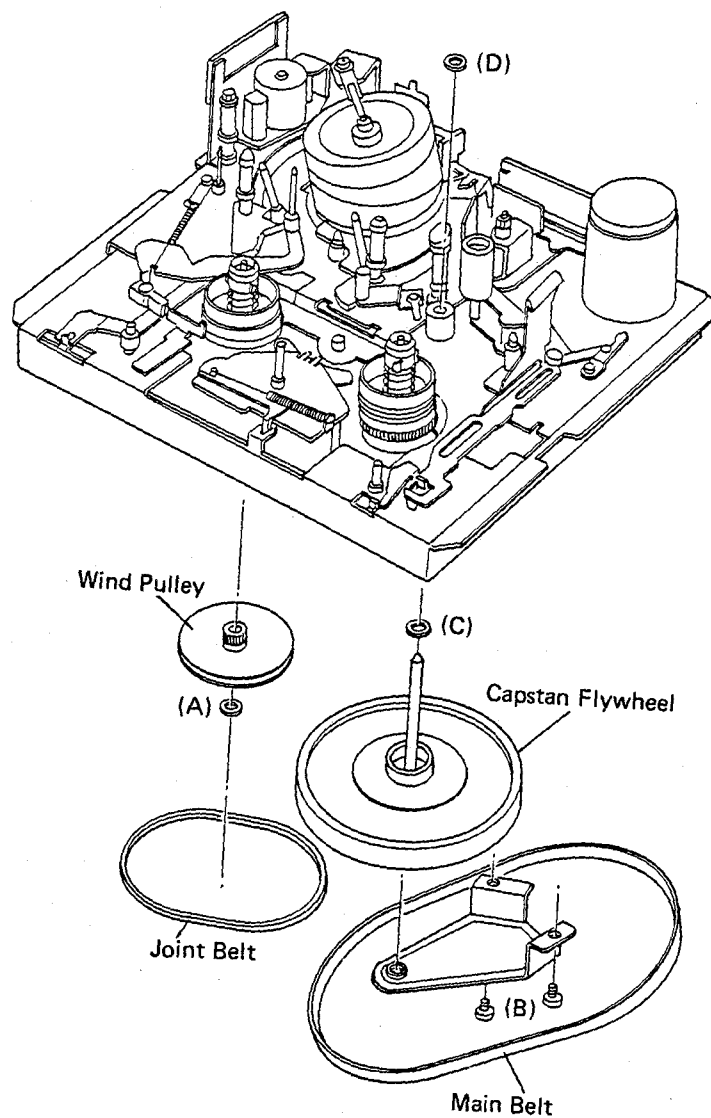
1. Remove Sub-Chassis Unit Flywheel and Front Loading Motor Ass'y.
2. Remove E-ring (A) and take off Gear Ass'y.
3. Remove E-ring (B) and take off Gear Ass'y.
4. Remove E-ring (C) and take off Gear Ass'y.
5. Remove 3 E-rings (D), 2 Plate Washers (E) and 1 Plate Washer (F).
6. Remove 2 screws (J).
7. Take off the Loading Plate (L).
8. Take off the Joint Gear (K), 2 Guide Gears (G), Guide Roller (H) and Plate Washer (I).
9. Take off the Loading Plate (R).
10. Take off 2 Guide Gears (G') and Guide Roller (H').



[16] CAPSTAN FLYWHEEL

1. Remove Front Loading Unit.
2. Take off the Joint Belt and Main Belt.
3. Take off the Polyslide Washer (A) and Wind Pulley.
4. Remove 2 screws (B).

Remark: Do not miss the washer (C) and (D) when pull out the capstan flywheel.



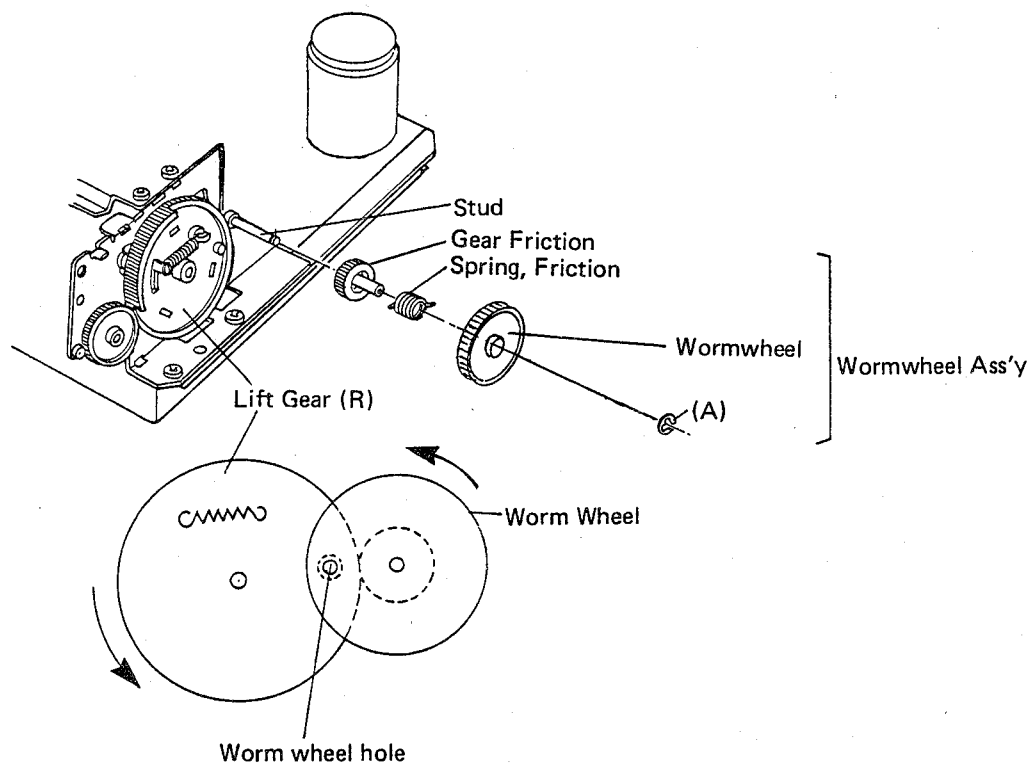
[18] FRONT LOADING WORMWHEEL UNIT

- DISASSEMBLY

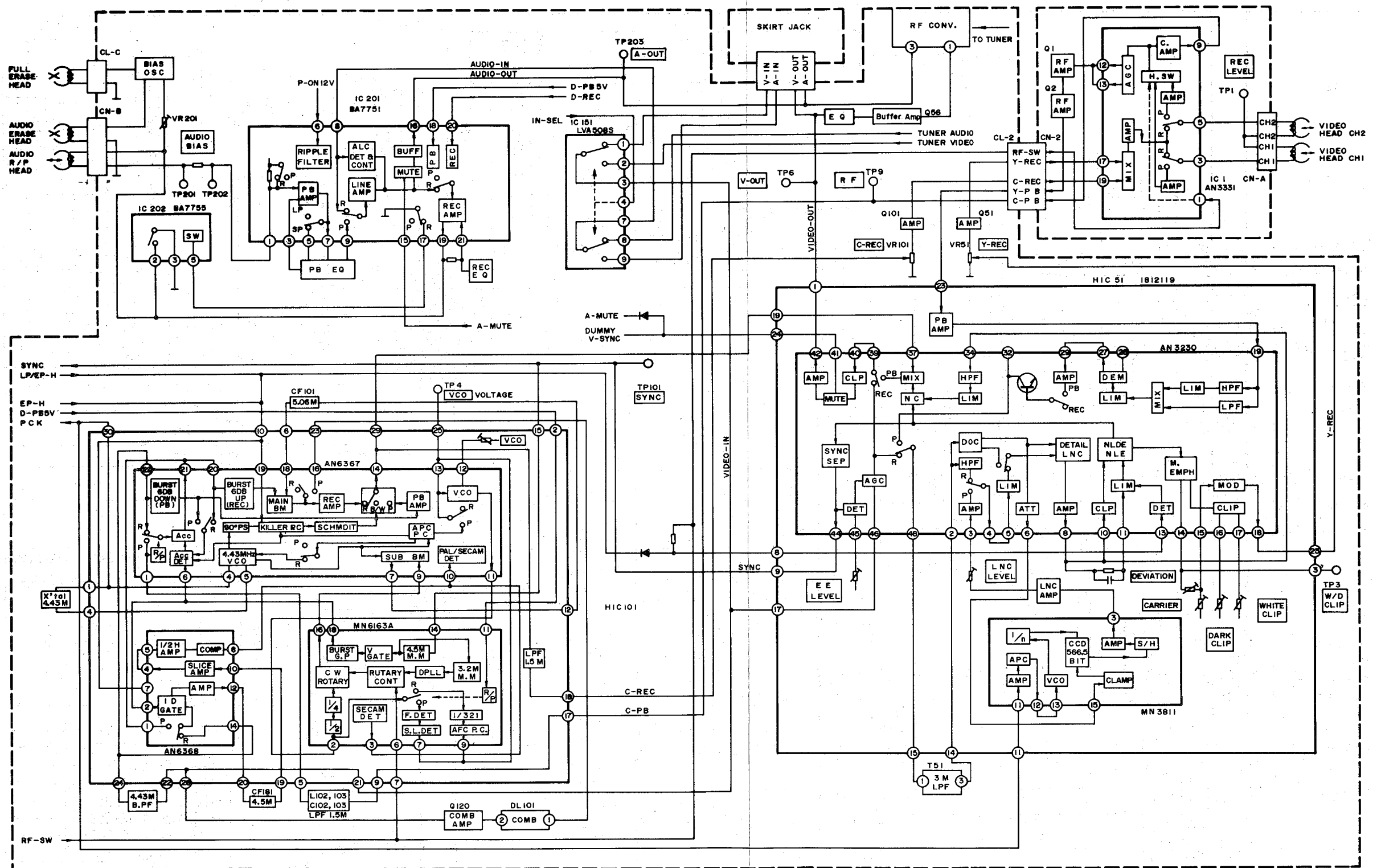
1. Remove E-ring (A).
2. Remove Wormwheel Ass'y. (Wormwheel, Spring Friction, Gear Friction.)

- ASSEMBLY

1. Turn Lift Gear (R) fully counterclockwise.
2. Restore Wormwheel Ass'y to Stud.
Match Lift Gear (R) to Wormwheel Hole as illustrated.

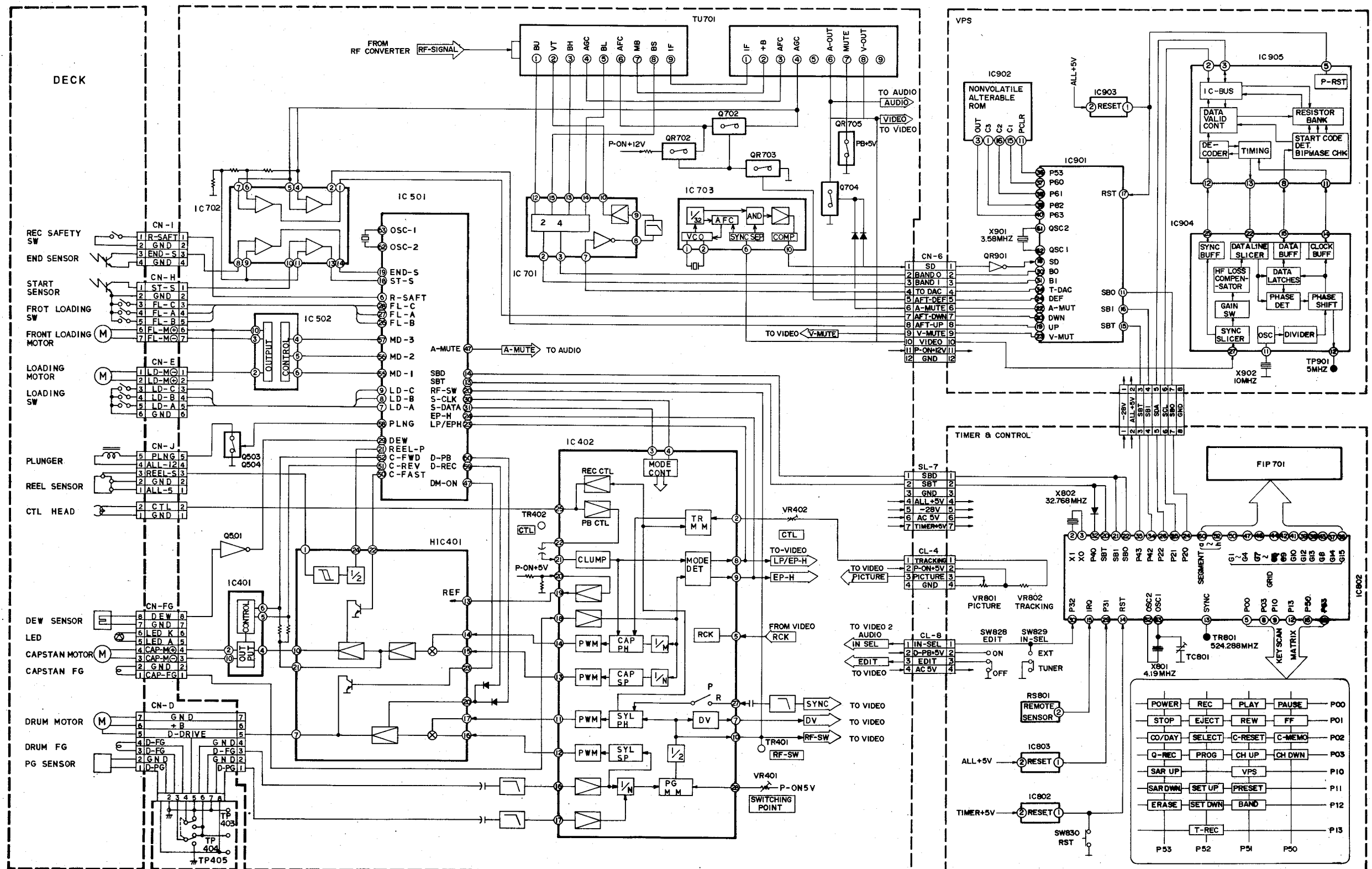


BLOCK DIAGRAM (VIDEO/AUDIO)



BV-11

BLOCK DIAGRAM (SERVO/SYSCON/TUNER/TIMER/CONTROL)



DECK ADJUSTMENT

1. Audio/control head height and azimuth adjustment.
 1. Connect CH1 of oscilloscope to AUDIO OUT. (Fig. 4-14)

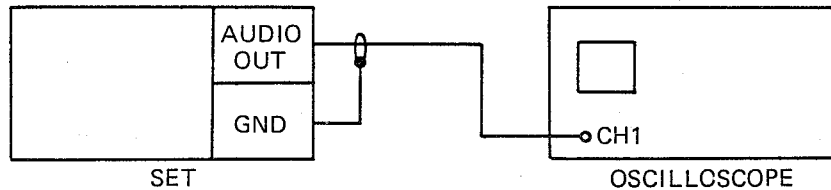
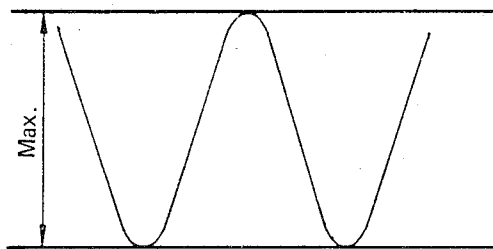


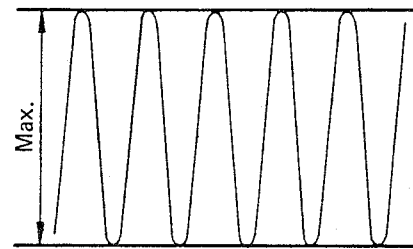
Fig. 4-14

2. Playback test tape F-6A 1kHz Audio Signal.
3. Adjust nut (A) to obtain maximum audio output level (Fig.4-15/17)
4. Playback test tape F-6N (6kHz Audio Signal)
5. Adjust screw (C) to obtain maximum audio output level (Fig.4-16/17)
6. Check that smooth tape transportation at the take-up guide pole. Especially tape separate and wrinkling. If these problem occur Pre-adjust (A) and (C). (Fig.4-17)
7. Adjust screw (B) to obtain maxium audio output level. (Fig.4-16/17)



1 kHz

Fig. 4-15



6 kHz

Fig. 4-16

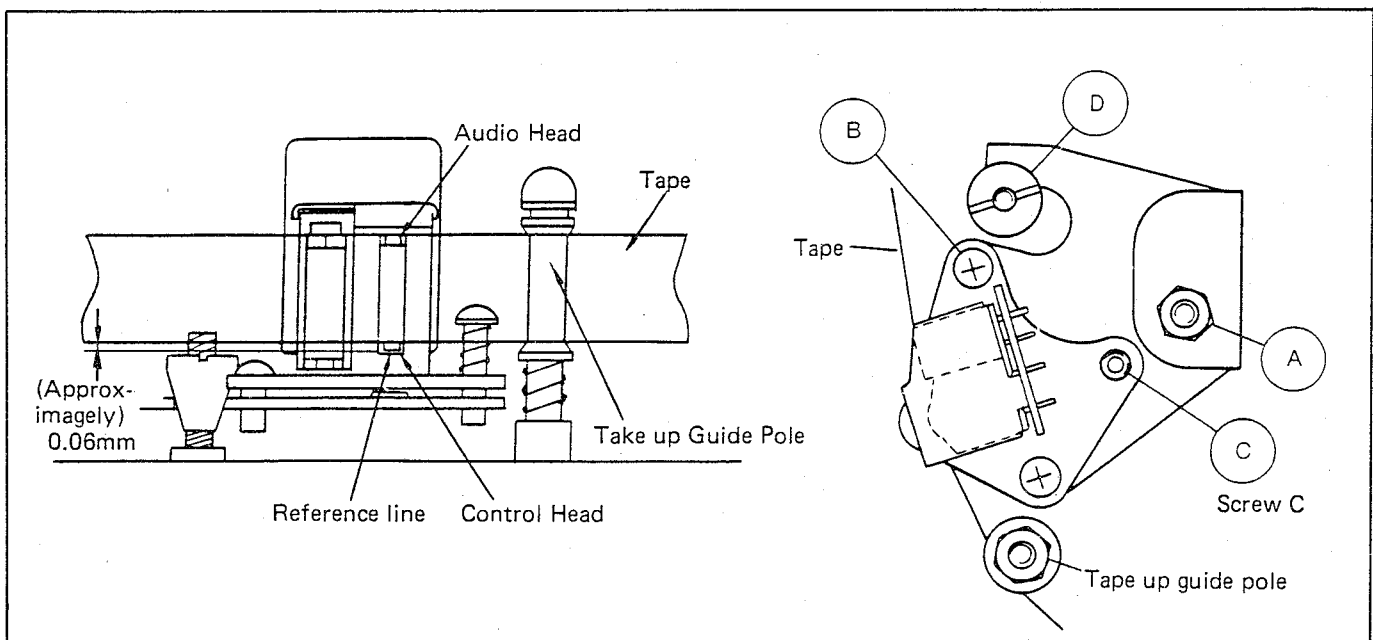


Fig. 4-17 A/C Head Adjustment

2. FM peak adjustment

1. Connect CH1 of oscilloscope to TP9.
2. Connect CH2 of oscilloscope across TP401 and Ground.
3. Set oscilloscope to TRIGGER mode.

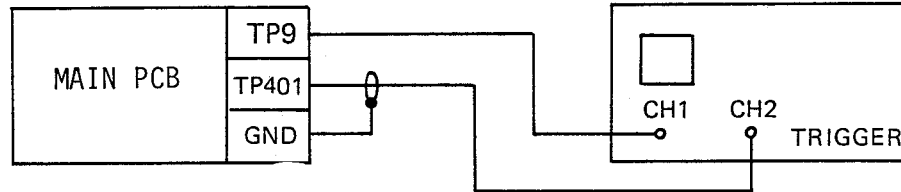


Fig.4-18

4. Playback test tape F-6N (stair step without color signal).
5. Adjust screw ④ to obtain maximum FM output level. (Fig. 4-17,4-19)

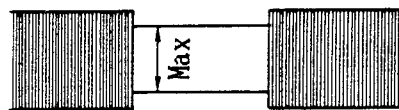


Fig.4-19

3. FM waveform adjustment

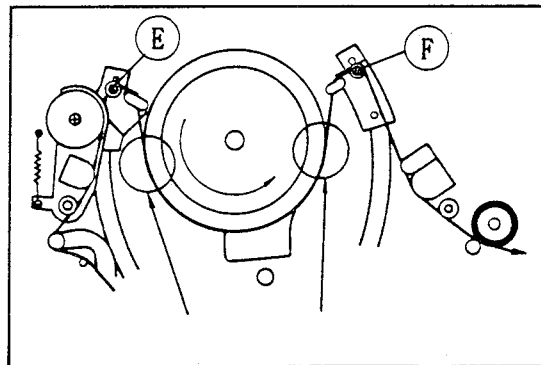


Fig.4-20

1. Connect CH1 of oscilloscope to TP9.
2. Connect CH2 of oscilloscope across TP401 and GND.
3. Set oscilloscope to TRIGGER mode.

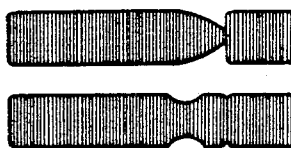


Fig. 4-21



Fig. 4-22

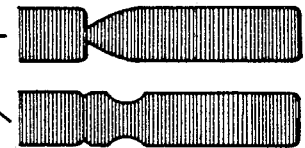


Fig.4-23

4. Playback test tape F-6N (stair step without color signal).
5. If the FM waveform observing by oscilloscope as same as shown in Fig. 4-21, adjust screw ⑥ until waveform becomes as shown in Fig. 4-22.
6. If the FM waveform observing by oscilloscope is as same as shown in Fig.4-23, adjust screw ⑤ until wave form becomes as shown in Fig. 4-22.

NOTE: 1. Confirm that Electrical Adjustment (Video Head Switching Point and CTL Preset) has been done before Deck Adjustment.
2. Deck Adjustment should be done at Tracking Volume center position.

Service schedule of components

○:Check ●:Replace

D e c k		Periodic Service Schedule			
Ref.No	Parts Name	1000 hr	2000 hr	3000 hr	4000 hr
2	Drum, upper with video head	○	●	○	●
224	Pinch Roller (A)		●		●
301	Ass'y, Clutch		●		●
392	Motor Ass'y, Capstan		●		●
651	Motor with Pulley			●	
702	Motor Ass'y, Loading			●	
373	Belt, Main		●		●
393	Belt, Drive		●		●
394	Belt, Joint		●		●
659	Belt, TL		●		●
338	Shue, Brake		●		●
193	Flat Ass'y, Back Tension		●		●
16	Ground, Drum			●	
142	Head, Audio/Control			●	
178	Head, Full Erase			●	
281	Reel Ass'y, Supply			●	
282	Reel Ass'y, Take-up (B)			●	
311	Clutch Ass'y, RF (B)		●		●

— How to service the defective units. —

1. Clean all parts for the tape transportation.
Drum, upper with video head/Pinch Roller
Audio/Control head/Full erase head
2. After clean up the parts must be confirmed all DECK ADJUSTMENT.

ALIGNMENT INSTRUCTIONS

PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

REQUIRED TEST EQUIPMENT

1. Oscilloscope : Dual-trace with 10 : 1 probe.
2. Frequency Counter
3. Color Monitor
4. Pattern Generator (Color bar with 100% white)
5. AC Voltmeter (RMS)
6. Alignment Tape F6-A (Color bar with 100% white)

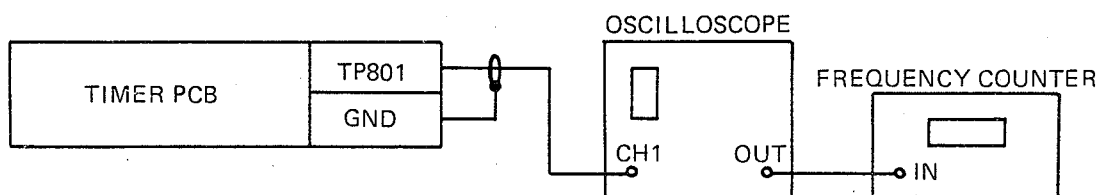


Fig. 1

No.	Item	Test point	Adjustment point	Method	Connection Figure
1	Timer clock E-E Mode	TP801 Ground	TC801	<ol style="list-style-type: none"> 1. Connect the oscilloscope across. TP801 and Ground. 2. Connect the frequency counter to oscilloscope out. 3. Make adjustment by TC801 so that the indication of frequency counter becomes 524.288 kHz \pm 1Hz. 	Fig.1

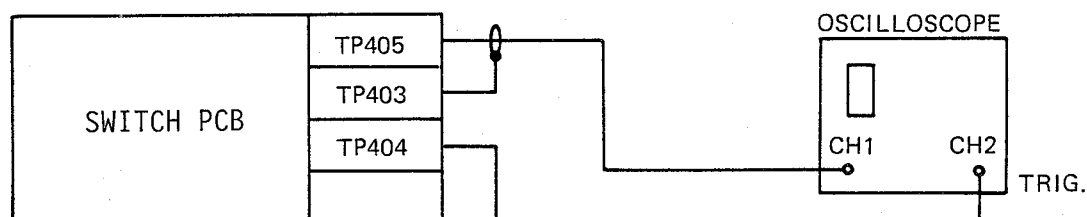


Fig. 2

No.	Item	Test point	Adjustment point	Method	Connection Figure
2	Drum PG/FG polarity Adjustment (P.B. Mode) Test Tape F6-A	TP403 (GND) TP404 (FG) TP405 (PG)	SW401	<ol style="list-style-type: none"> 1. Connect CH1 of oscilloscope across. TP405 and Ground (TP403). 2. Connect CH2 of oscilloscope to TP404. 3. Set oscilloscope mode to (−) Trigger. 4. Set SW401 either position so that PG, FG pulse becomes as shown below. 	Fig.2

* SW401 adjustment only needs when the deck is replaced.

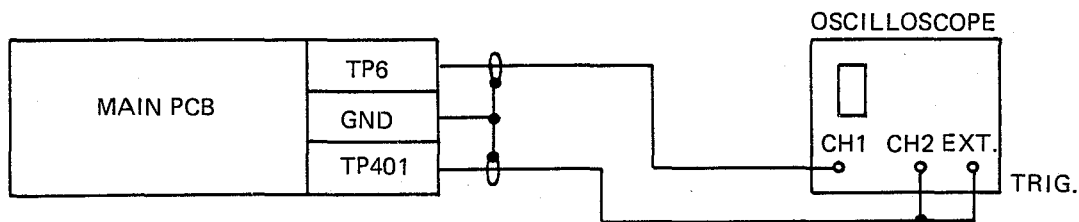


Fig. 3

No.	Item	Test point	Adjustment point	Method	Connection Figure
3	Switching point Adjustment Test Tape F6-A	TP6 TP401	VR401	<ol style="list-style-type: none"> 1. Connect CH1 to TP6 of VIDEO-OUT and CH2 to TP401, and set EXT. Trigger mode (+) Trigger. 2. Playback the tape and adjust by VR401 so that the Vsync front edge of CH1 video output waveform comes the position where 6.5H is delayed from the rising of CH2 Head Switching Pulse waveform. 	Fig.3

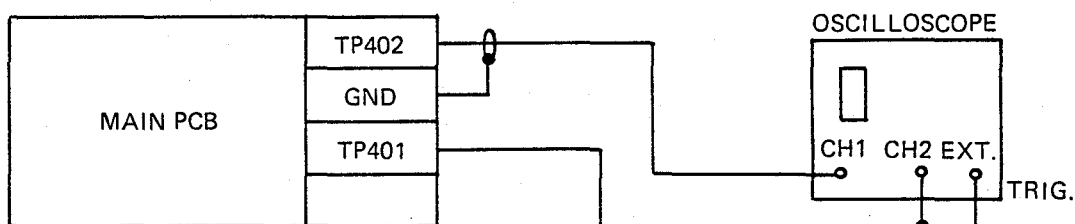


Fig. 4

No.	Item	Test point	Adjustment point	Method	Connection Figure
4	CTL Preset Adjustment (P.B. mode) Test tape F6-A	TP402 TP401	VR402	<ol style="list-style-type: none"> 1. Connect CH1 of oscilloscope across TP402 and Ground. 2. Connect CH2 of oscilloscope across TP401 and Ground. 3. Set oscilloscope mode to EXT. Trigger (+) Trigger. 4. Playback the tape by setting tracking volume at center click position. 5. Adjust VR402 to make a position of CTL signal where delayed 2.3m sec. from switching pulse starting position. 	Fig. 4

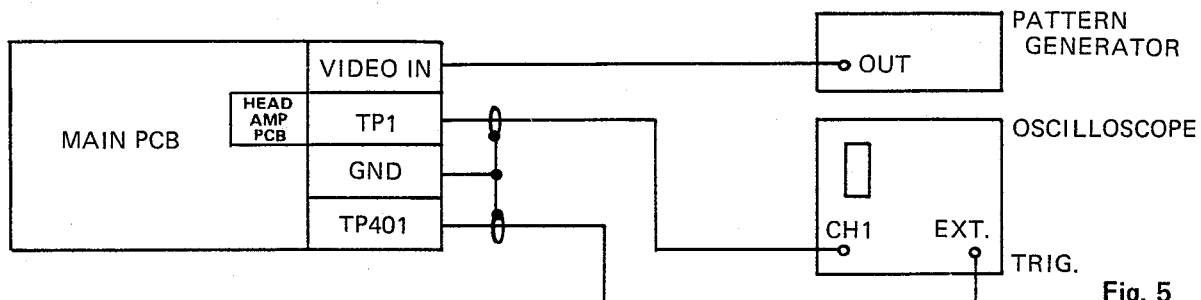

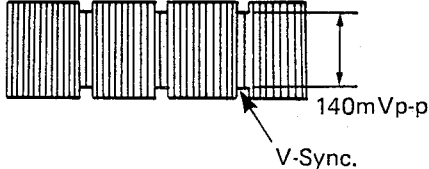


Fig. 5

No.	Item	Test point	Adjustment point	Method	Connection Figure
5	Rec. Current Adjustment (Rec. Mode) Blank tape	TP1 (GND) TP401	VR51 VR101	<ol style="list-style-type: none"> 1. Connect CH1 of oscilloscope across TP1 and Ground. 2. Connect EXT. Trig. of oscilloscope across TP101 and Ground. 3. Turn VR51 to fully clockwise direction 4. Input RED only signal to VIDEO INPUT. 5. Adjust by VR101 so that chroma level becomes $25\text{mVp-p} \pm 3\text{mV}$.  <ol style="list-style-type: none"> 6. Adjust by VR51 so that V-Sync level becomes $140\text{mVp-p} \pm 10\text{mV}$. 	Fig. 5

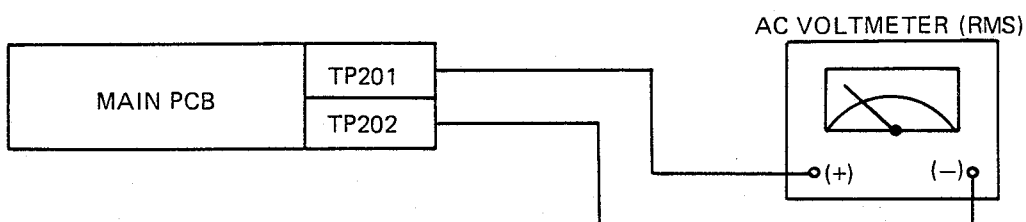
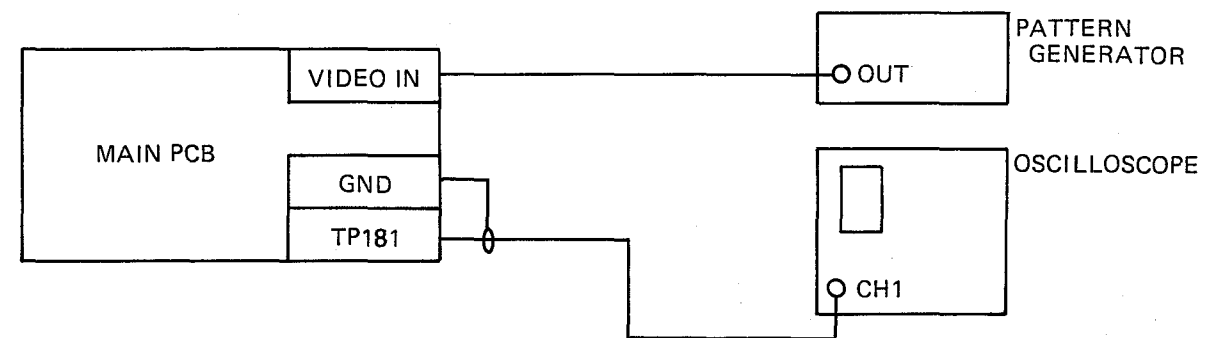


Fig. 6

No.	Item	Test point	Adjustment point	Method	Connection Figure
6	REC Bias Current	TP201 TP202	VR201	<ol style="list-style-type: none"> 1. Set the REC status by the blank tape. (Do not set the PAUSE. In PAUSE mode, the bias oscillation is stopped.) 2. Connect the AC voltmeter to TP201 and TP202. 3. Adjust by VR201 so that the voltage becomes 22mV. 	Fig. 6

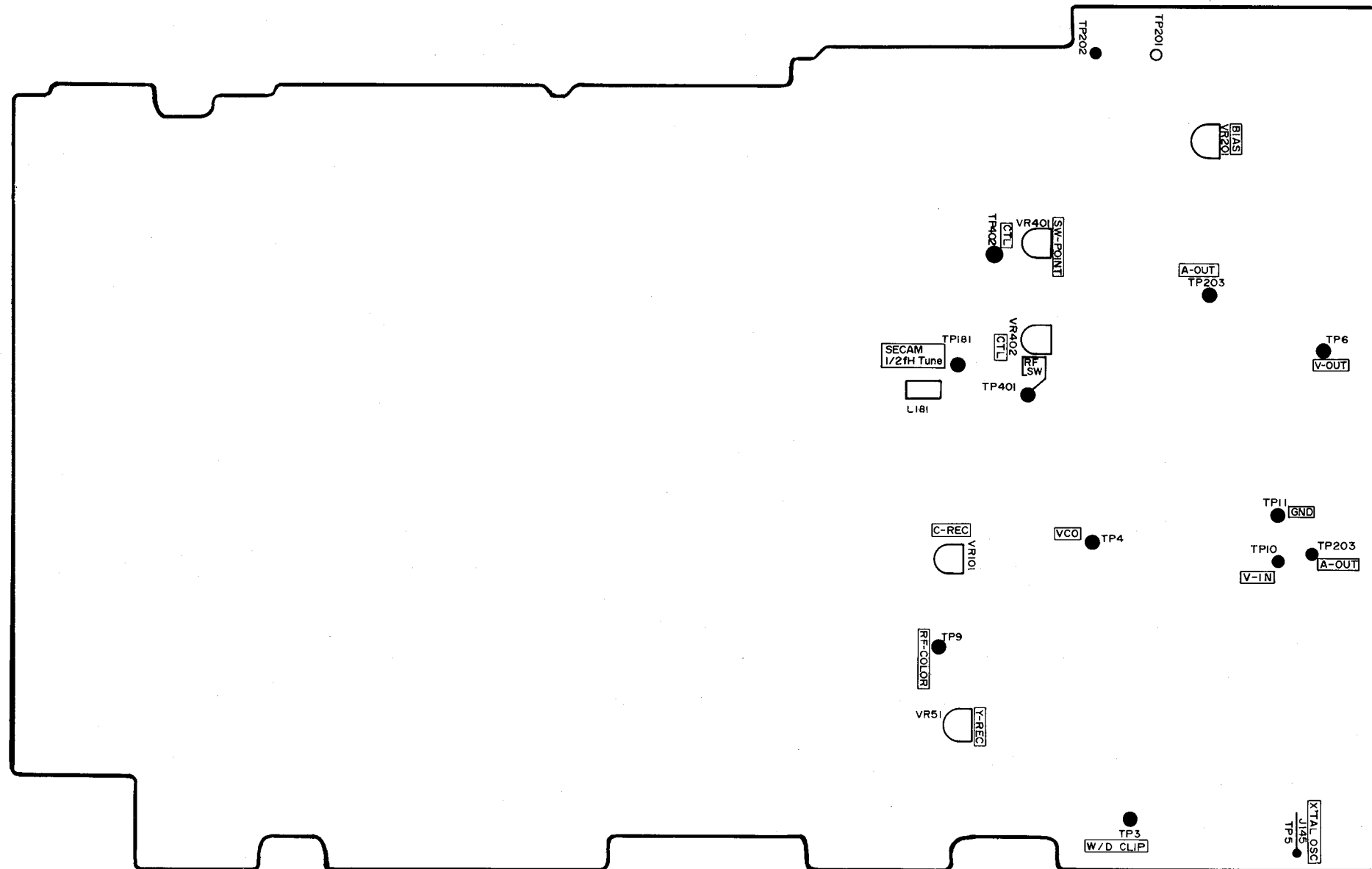


No.	Item	Test point	Adjustment point	Method	Connection Figure
7. *	SECAM 1/2 fH Tune Adjustment (Rec. Mode) Blank tape	TP181 GND	L181	1. Connect the equipment as shown in Fig. 7. 2. Input SECAM color bar to VIDEO IN. 3. Adjust L181 to make maximum output level.	Fig. 7

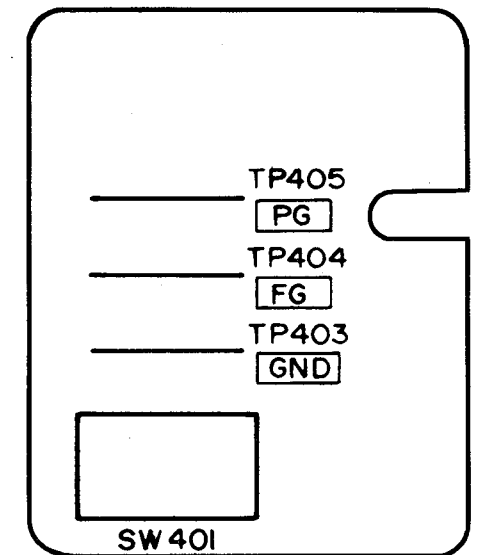
* Note: Require this adjustment for ME-SECAM model only.

TEST POINTS AND ALIGNMENT POINTS

MAIN PCB

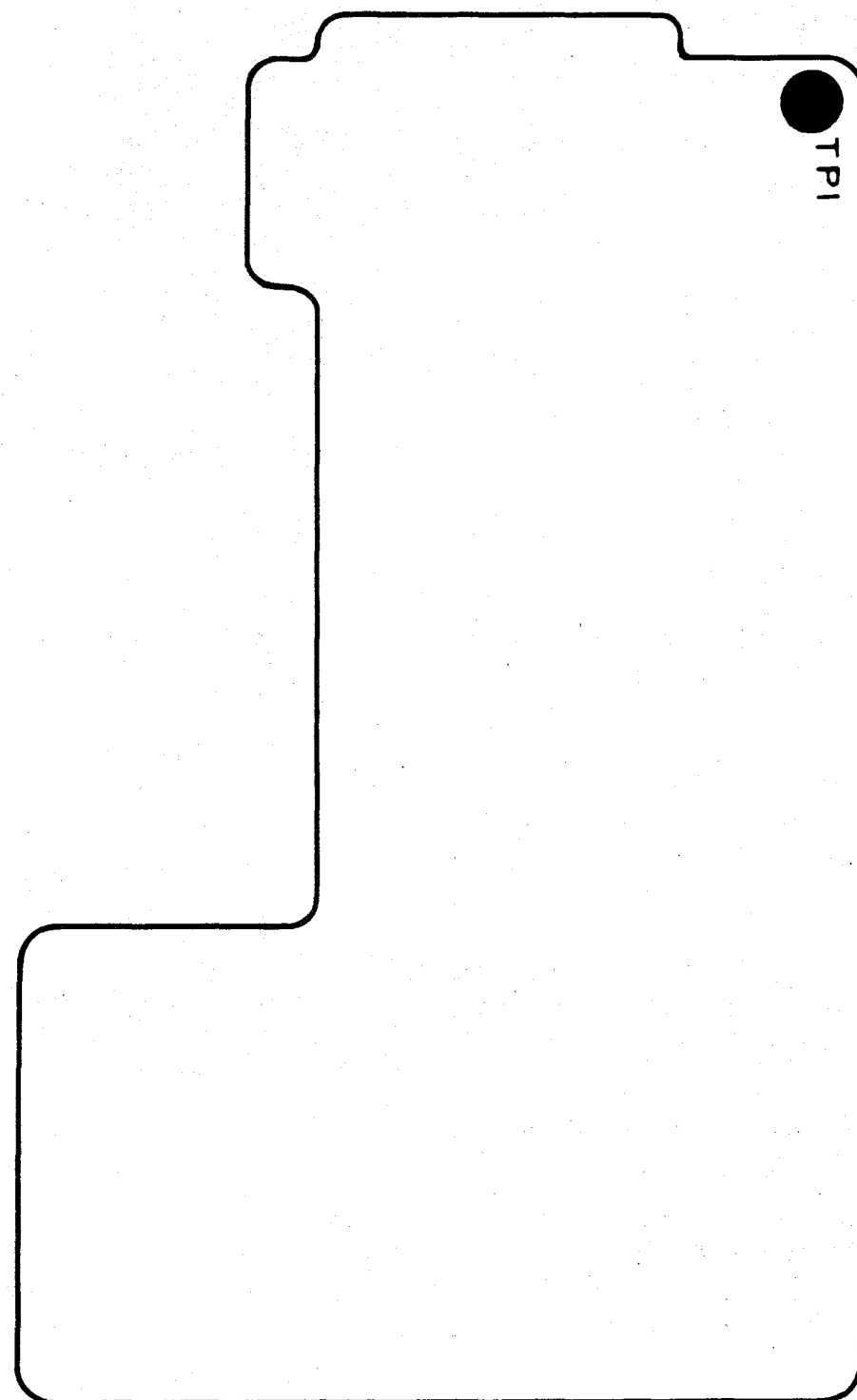


SWITCH PCB

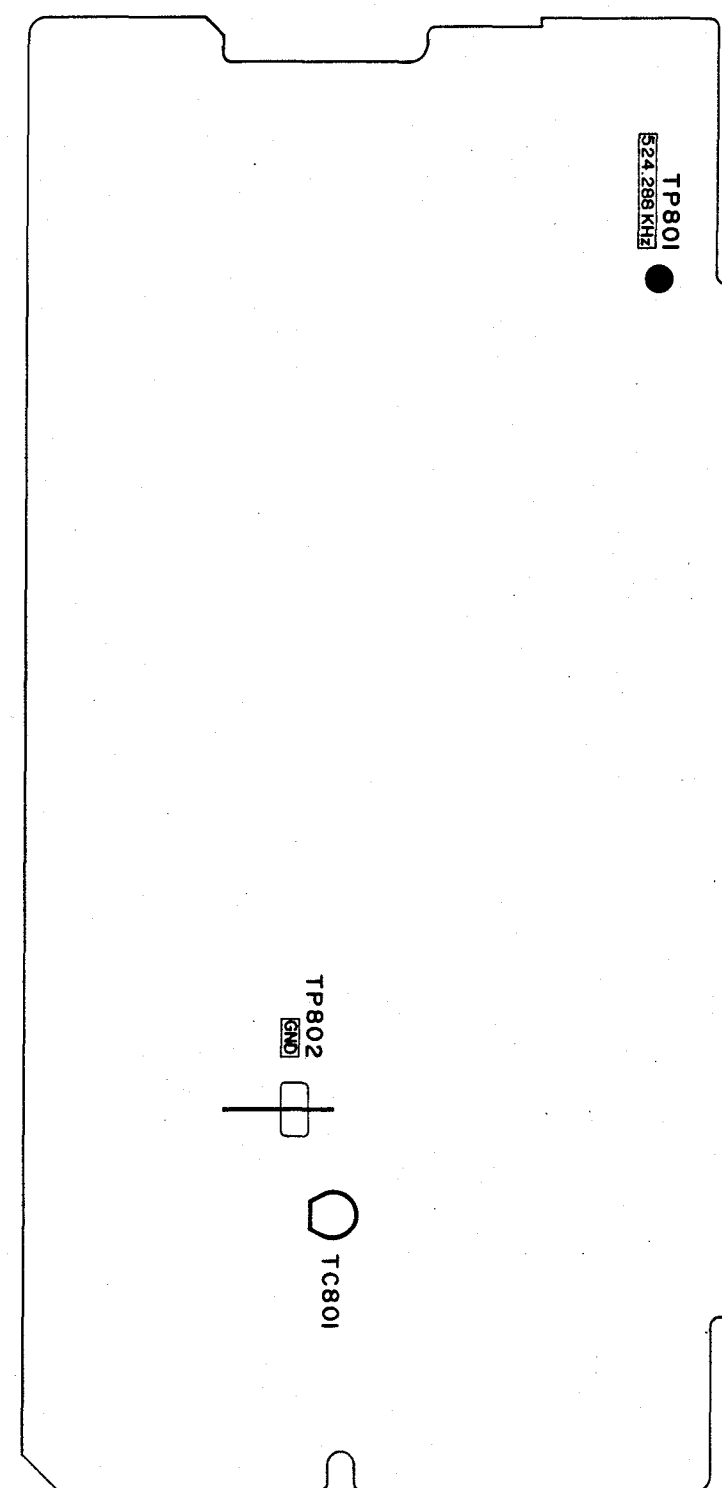


TEST POINTS AND ALIGNMENT POINTS

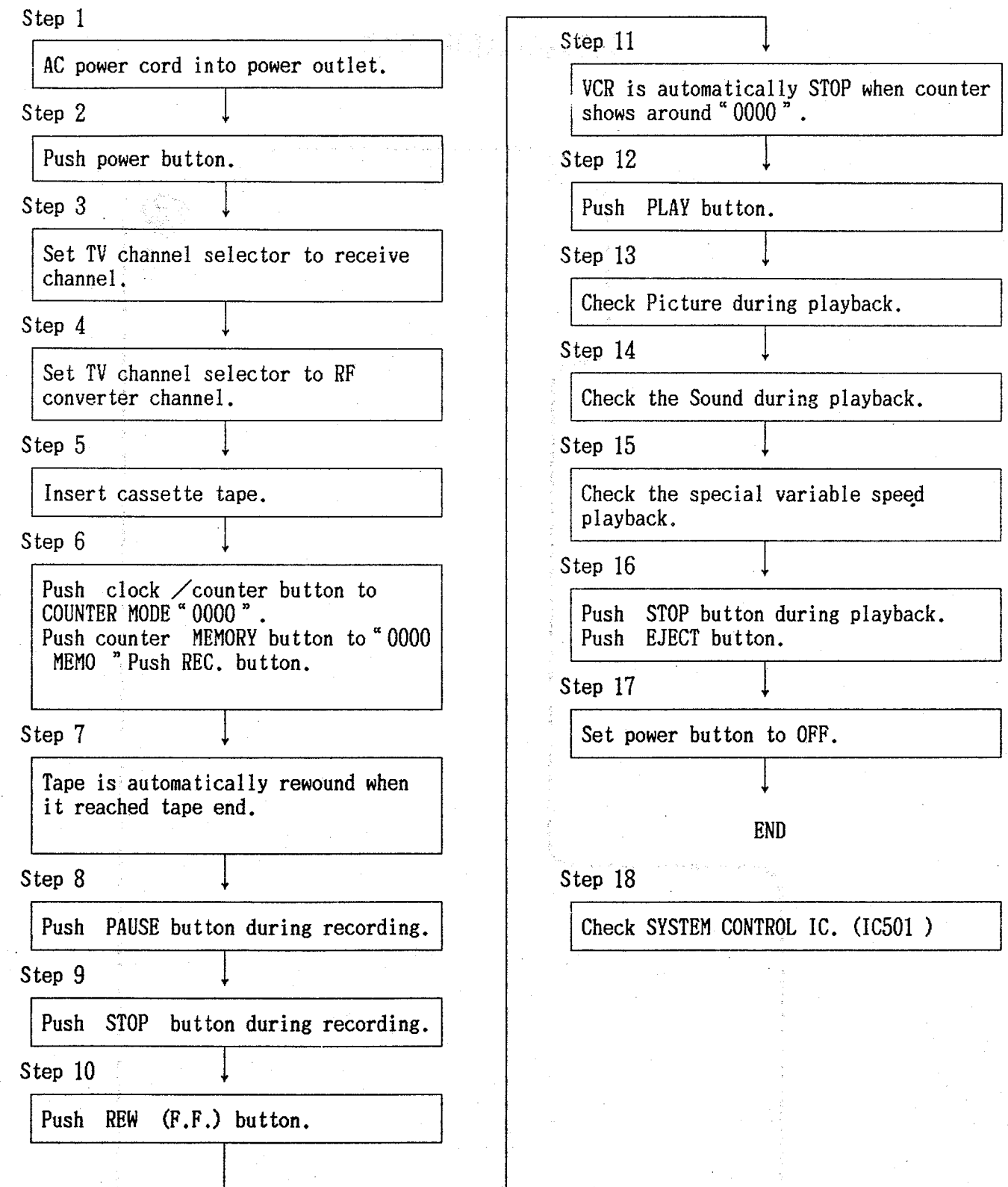
HEAD AMP PCB



TIMER PCB



TROUBLESHOOTING GUIDE



Step 1

AC power cord into power outlet.

Check display indication "--:--".

NG

Check AC 5V, ALL -28V.

OK

Push power button.

Step 2

Check display indication "■".

NG

Check IC803 Pins 18 and 21 is same waveform during depressing POWER button.

NG

OK

OK

Check POWER switch CN-5.

Check IC501 Pin 61 "H".

NG

Check LD-A,B,C on IC501.
(See Table 2.)

NG

OK

OK

Check IC803 Pin 42 and 59.

OK

IC803 defect.

Check IC604, Q651 and Q652.

OK

Check LD-A,B,C switch on deck.
(See Table 2.)

Check Q651~Q654 and Q701.

Step 3

Normal picture and sound of TV tuner on TV set.

NO

Cable from antenna and cable to TV set connected properly.

Step 4

OK

Check channel indicator in multi function display.

NG

Check IC803 Pin 47 and 48.

OK

Check CONV-1.

OK

OK

Check IC501 Pin 29, 30 and 31.

TV set defect.

Normal picture and sound of VCR tuner on TV set.

NO

OK

Check auto tuning operation.

NG

Check IC701 Pin 6, 7.

NG

IC701 defect.

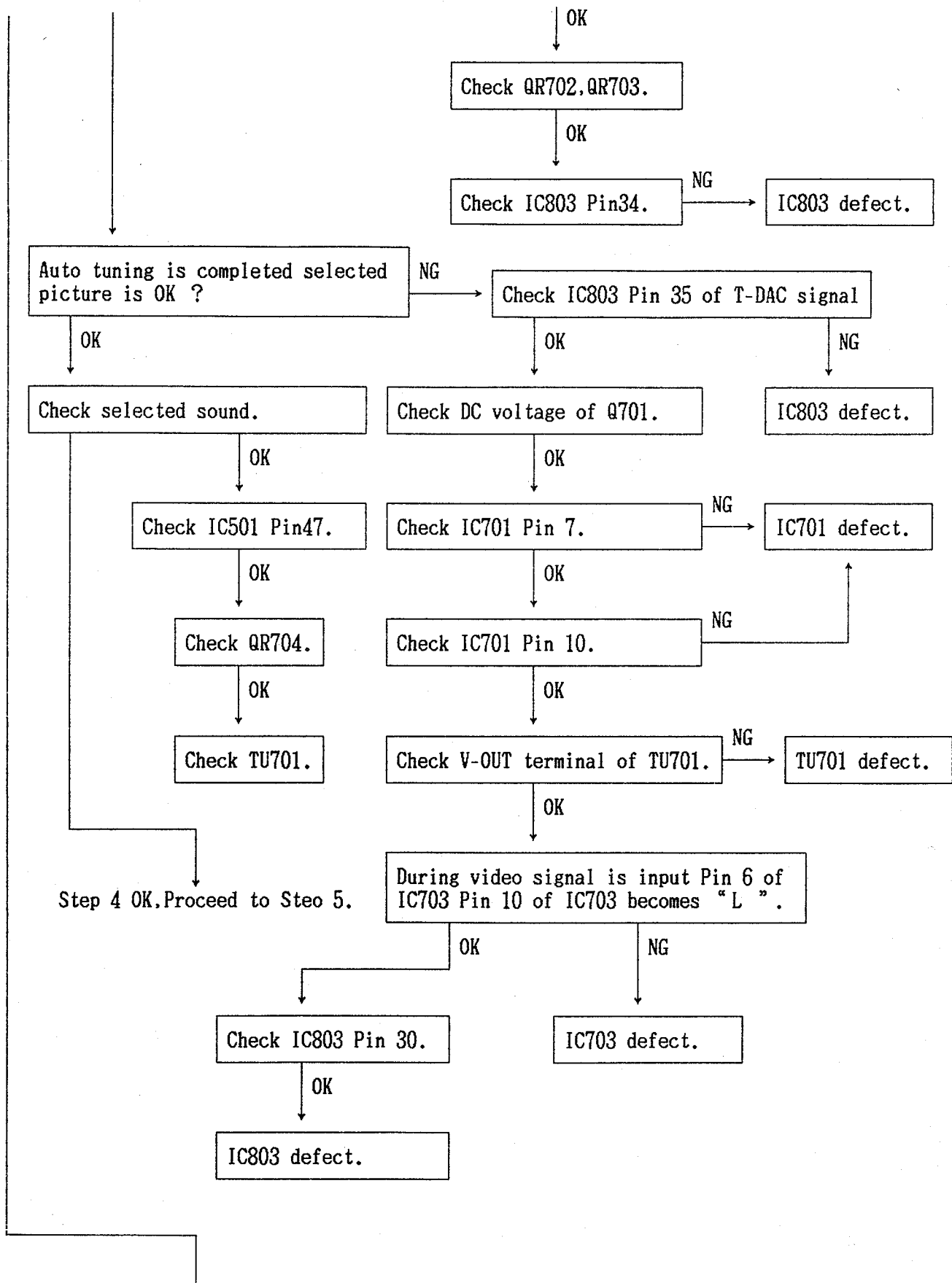
OK

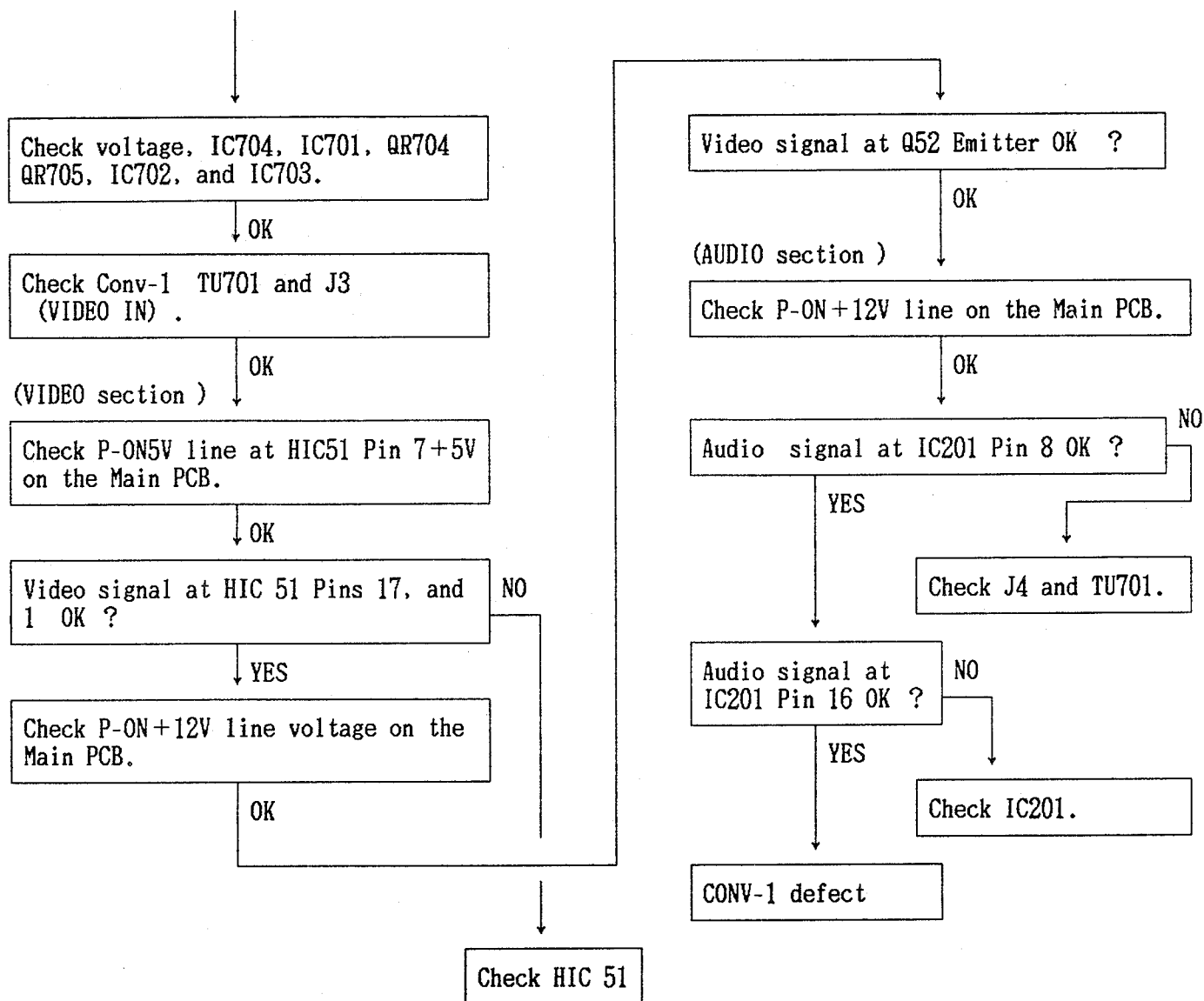
OK

Check IC 704.

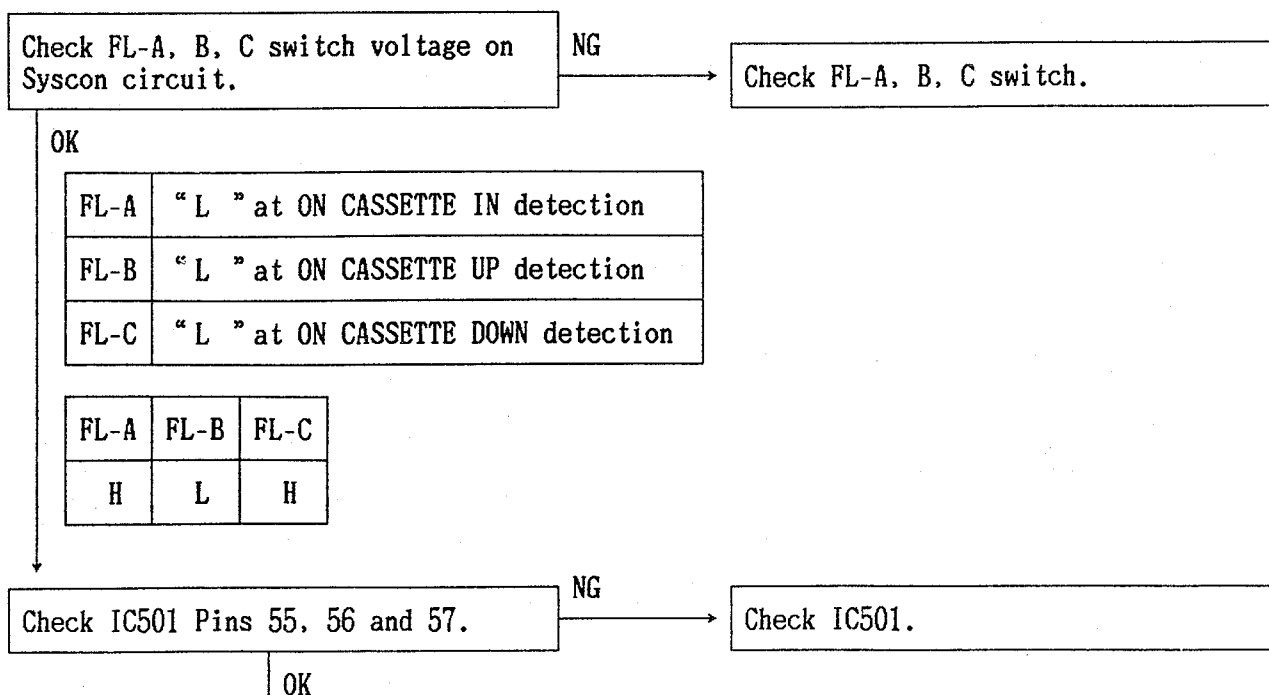
NG

IC704 defect.



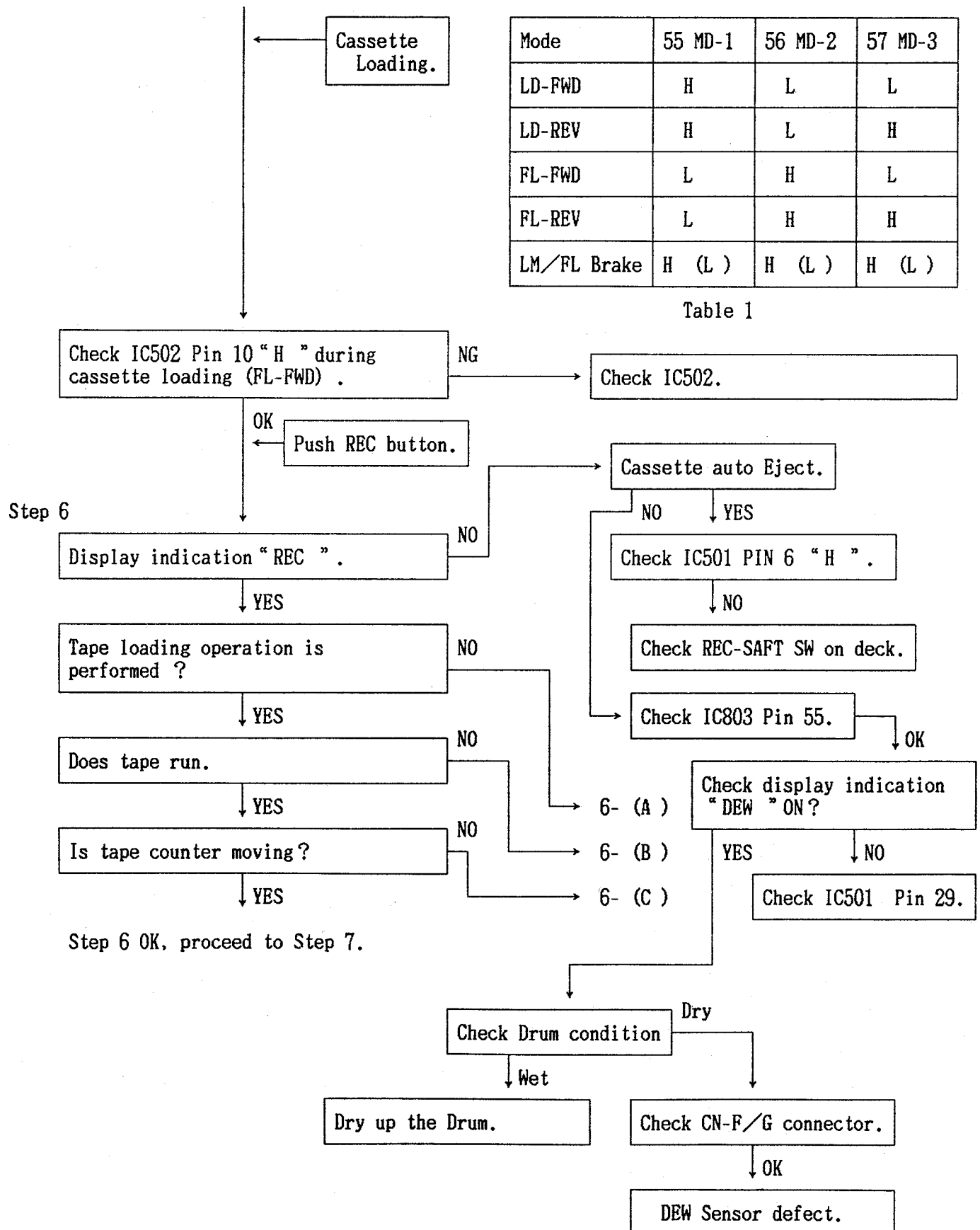


Step 5

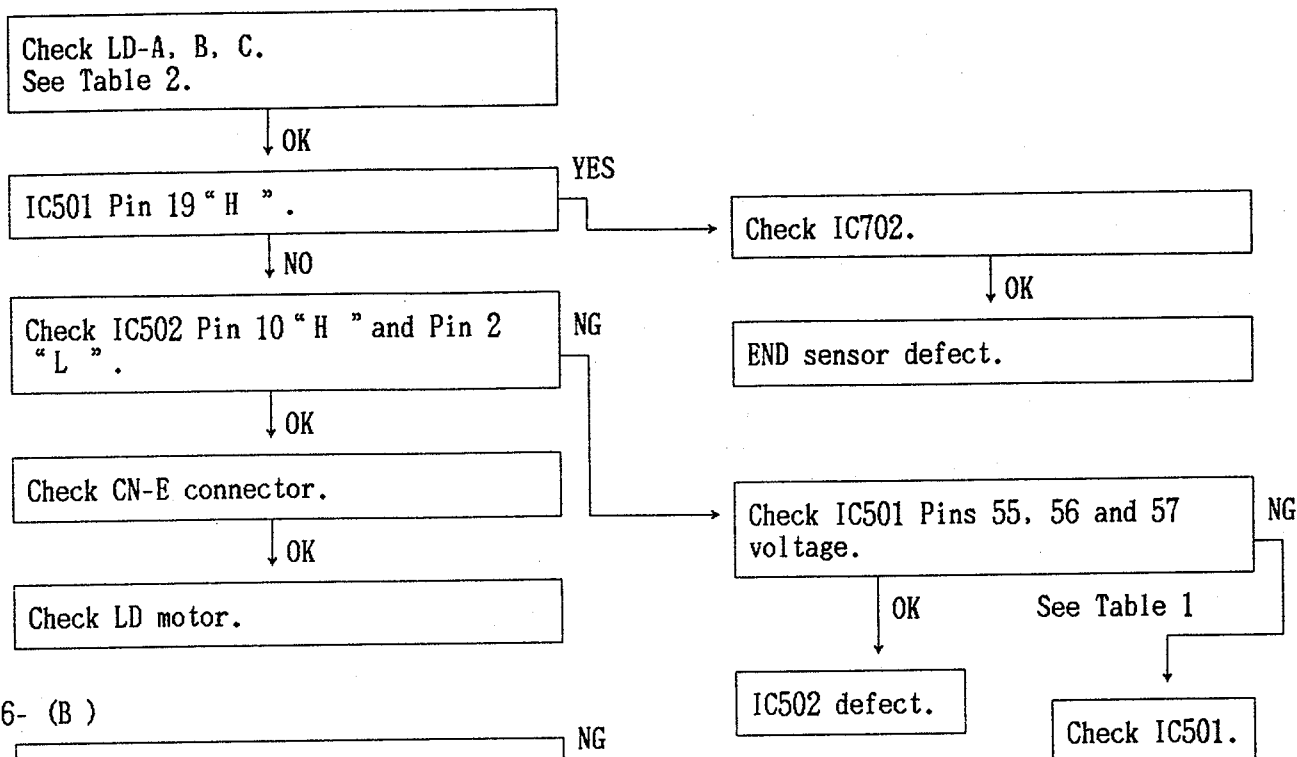


Mode	55 MD-1	56 MD-2	57 MD-3
LD-FWD	H	L	L
LD-REV	H	L	H
FL-FWD	L	H	L
FL-REV	L	H	H
LM/FL Brake	H (L)	H (L)	H (L)

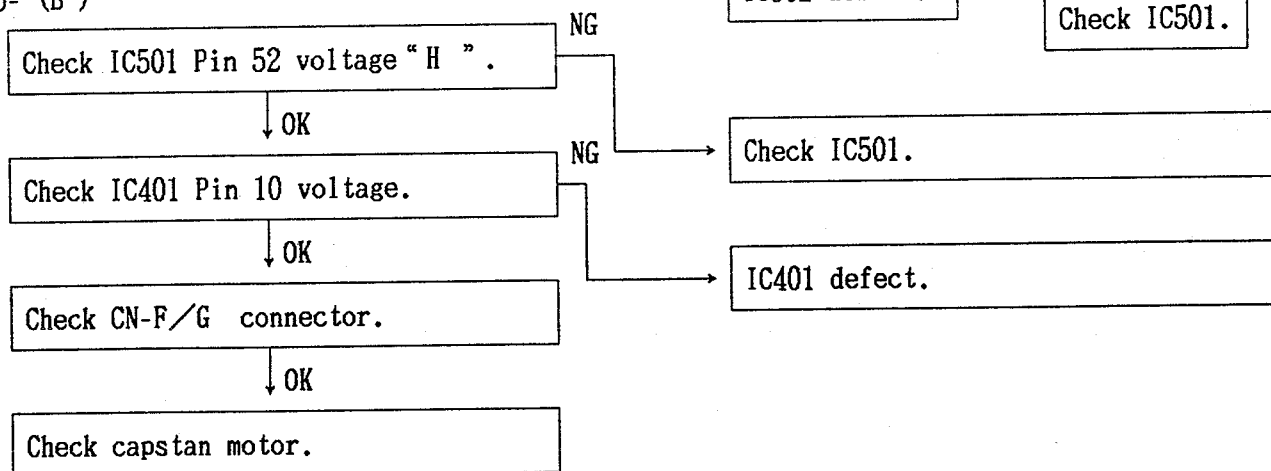
Table 1



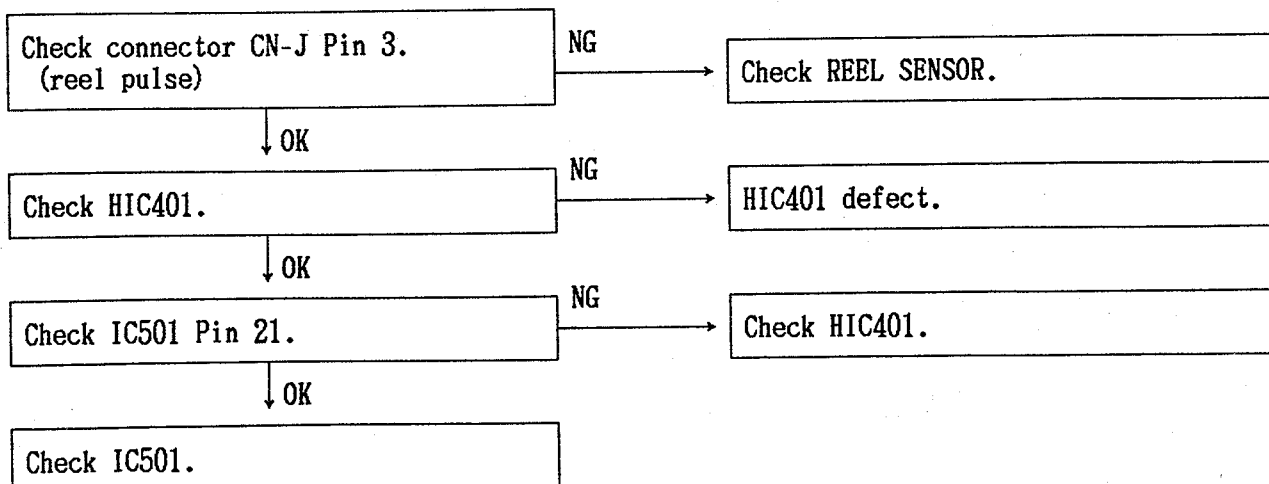
6- (A)



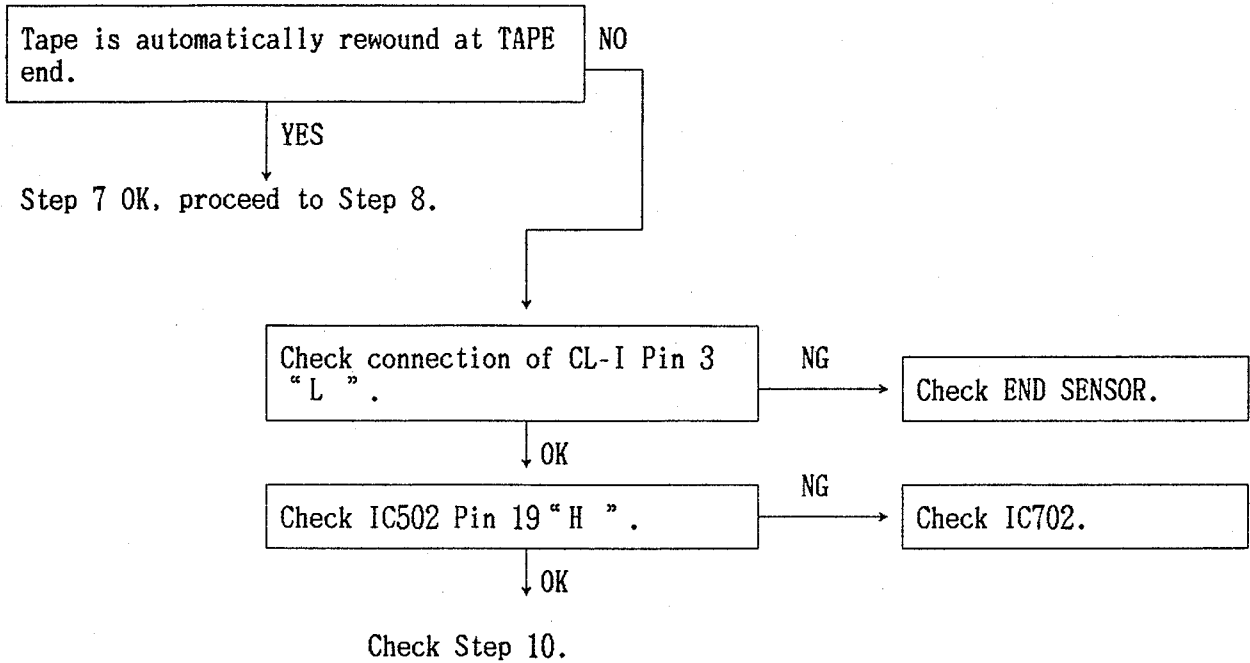
6- (B)



6- (C)

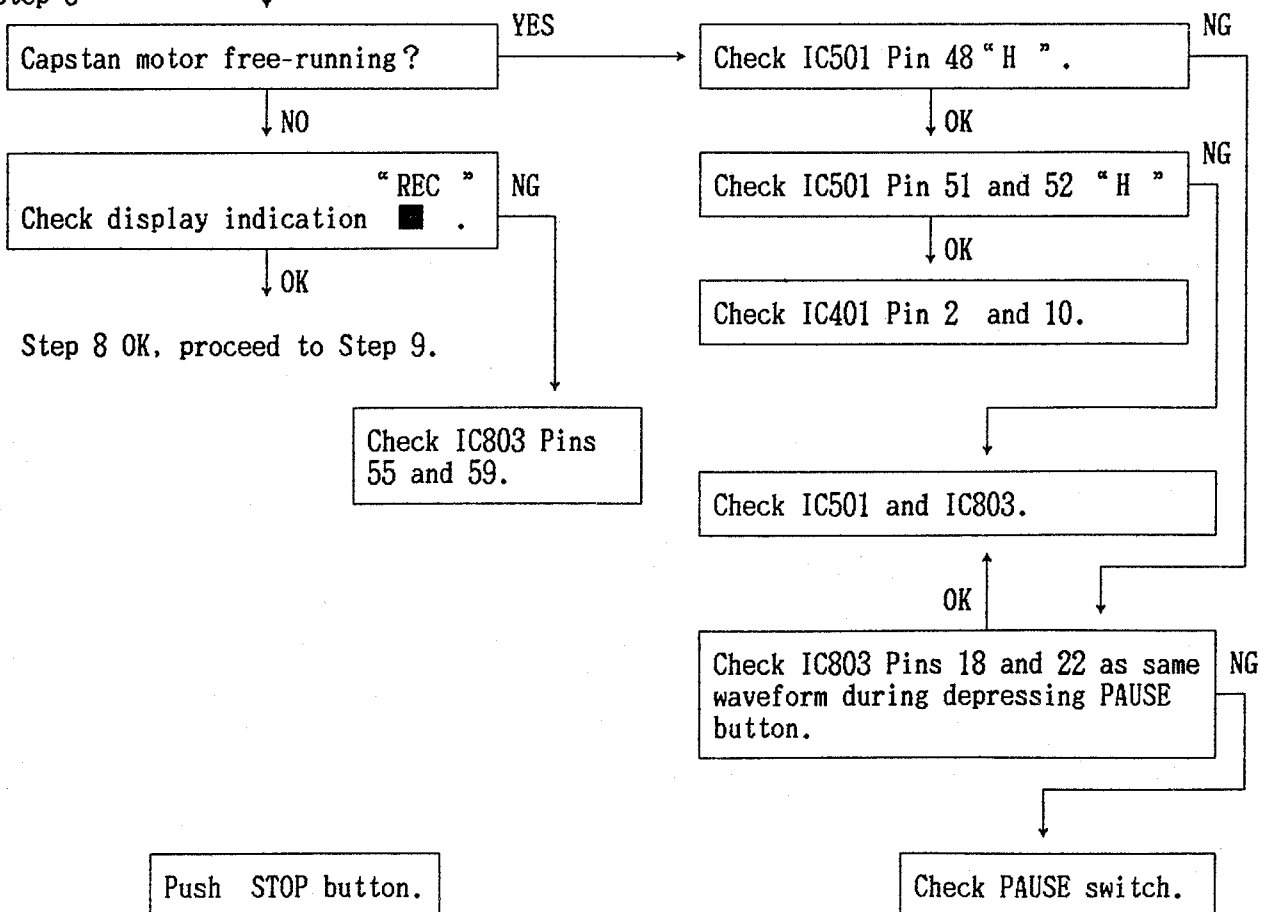


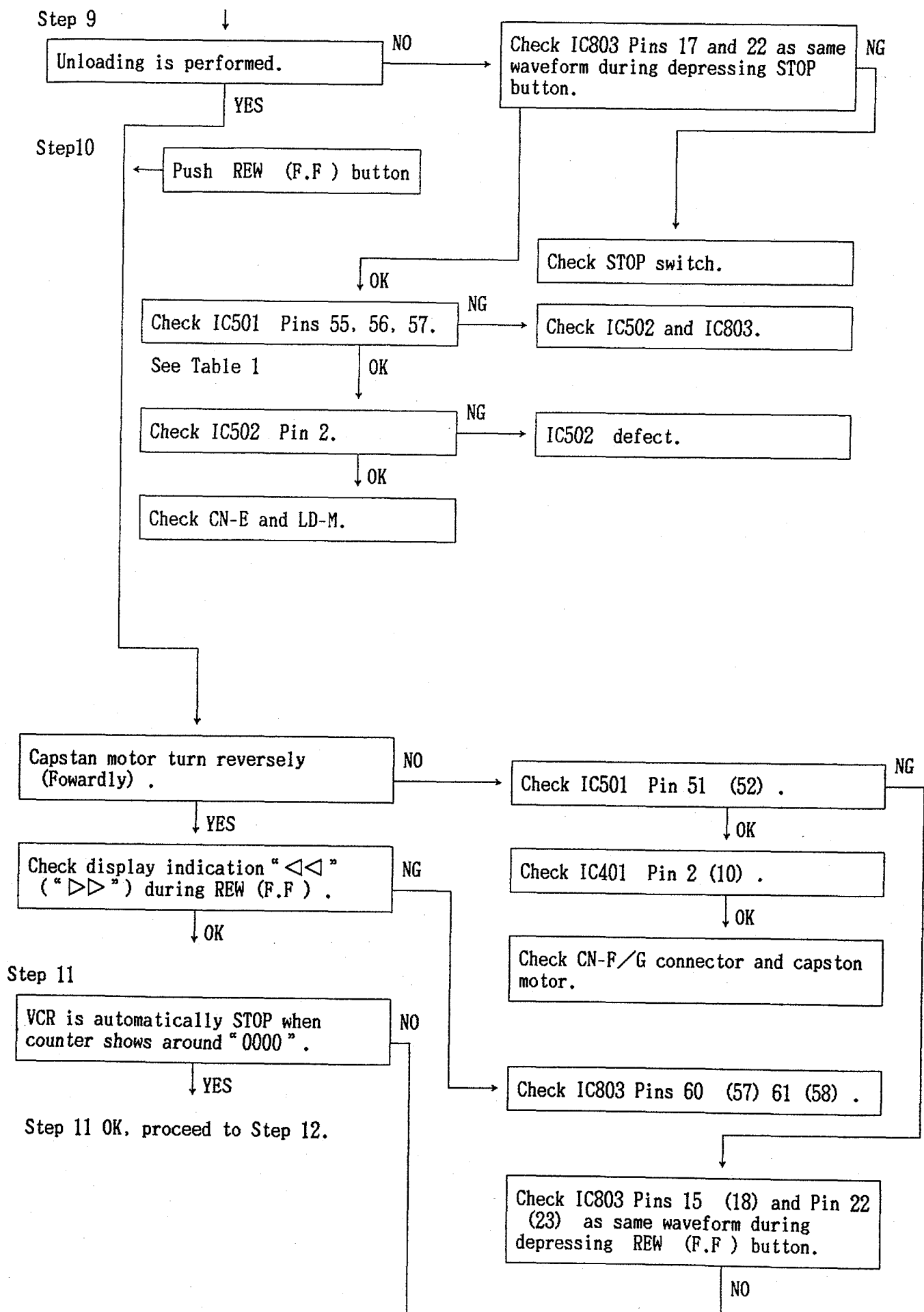
Step 7

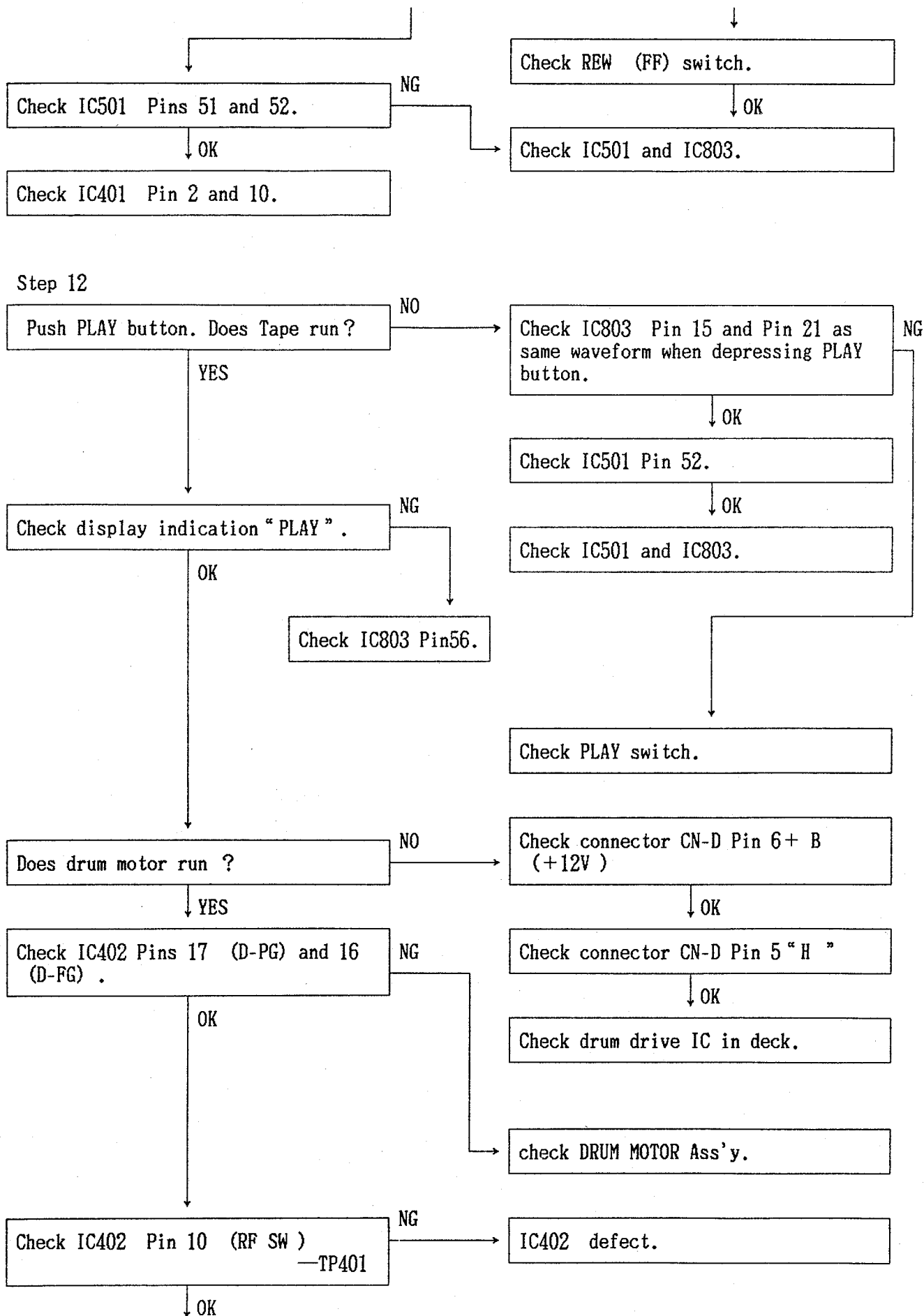


Push PAUSE button.

Step 8

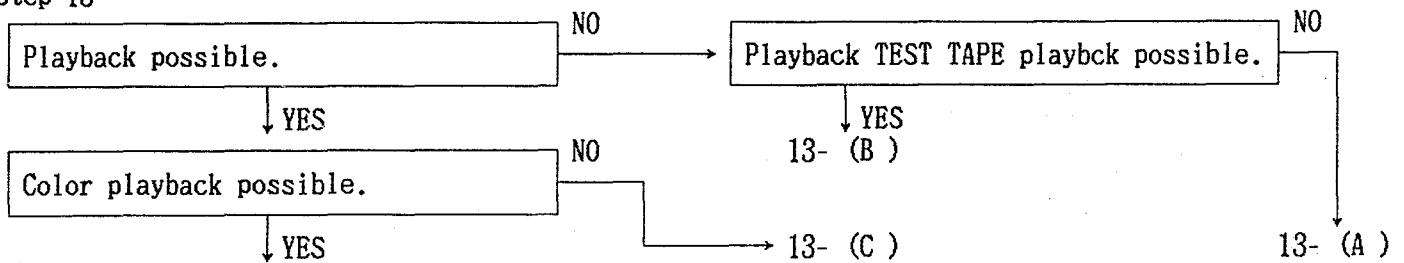






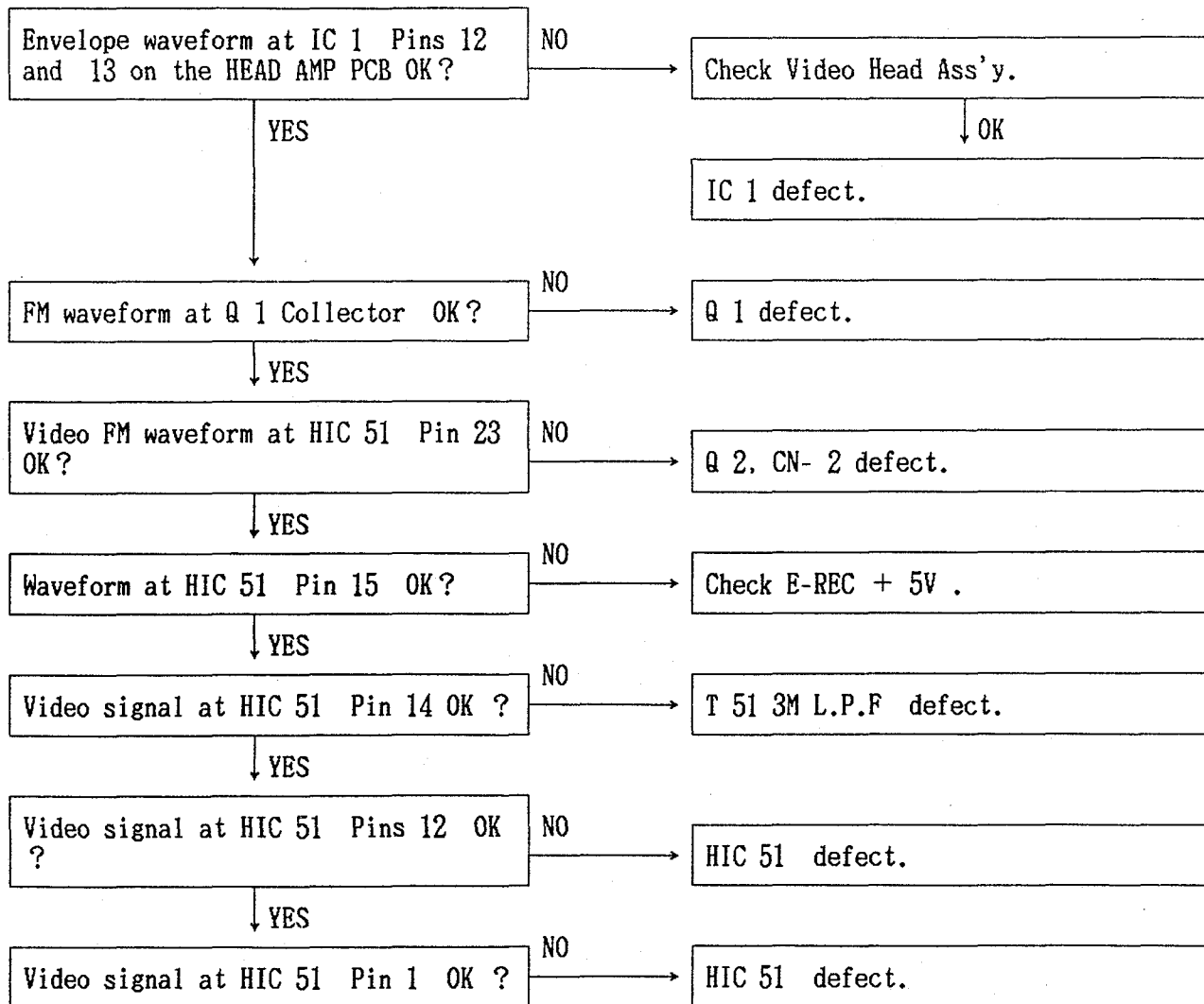
Step 12 OK. proceed to Step 13.

Step 13

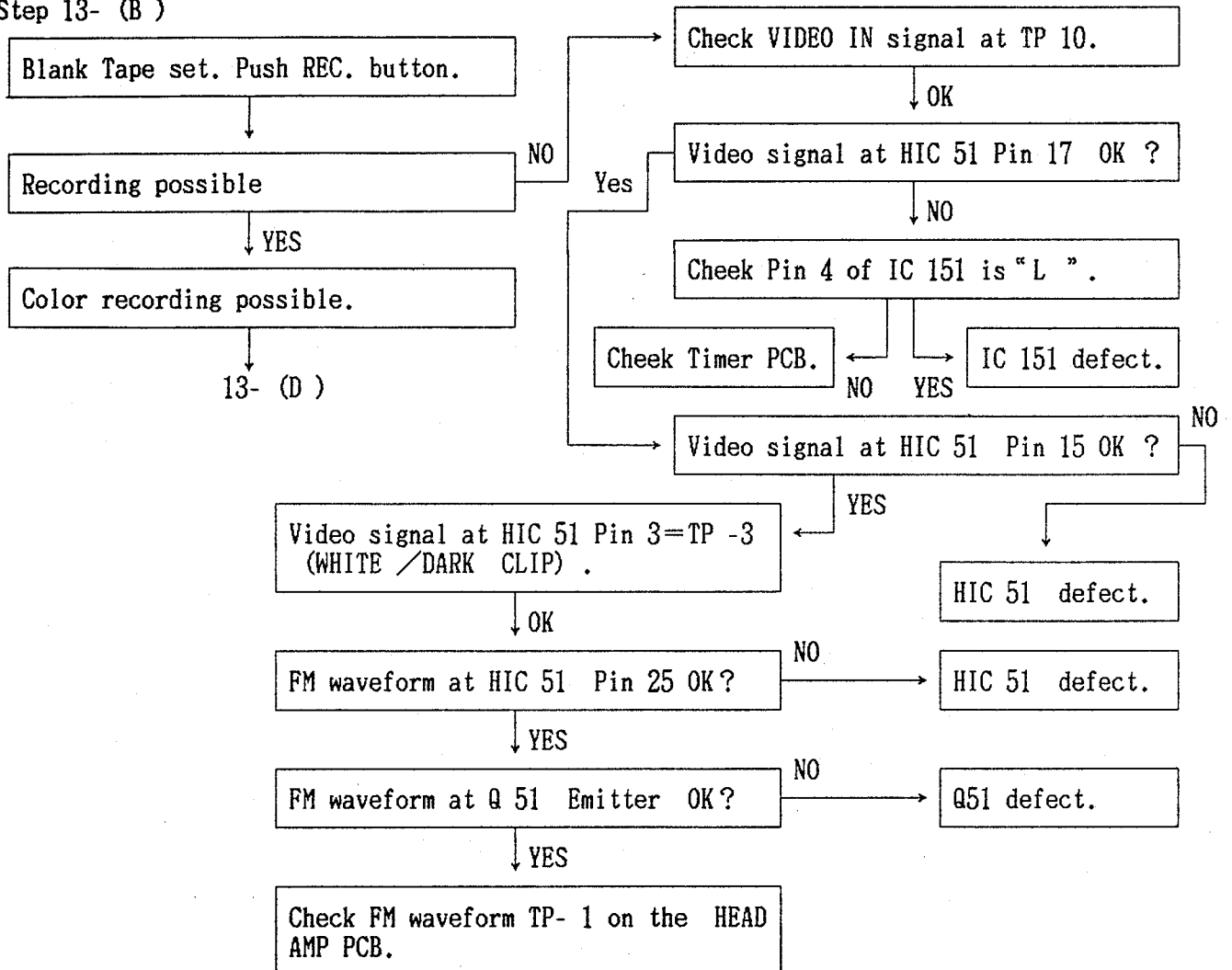


Step 13 OK, proceed to Step 14.

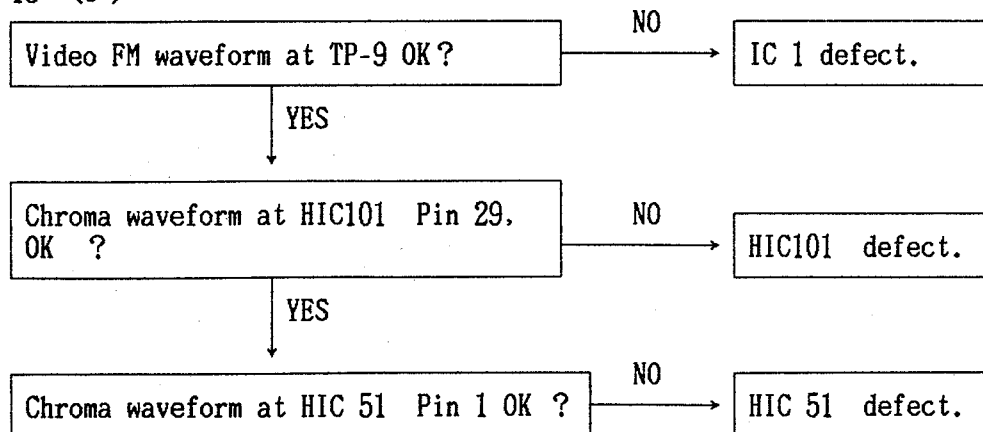
13- (A)



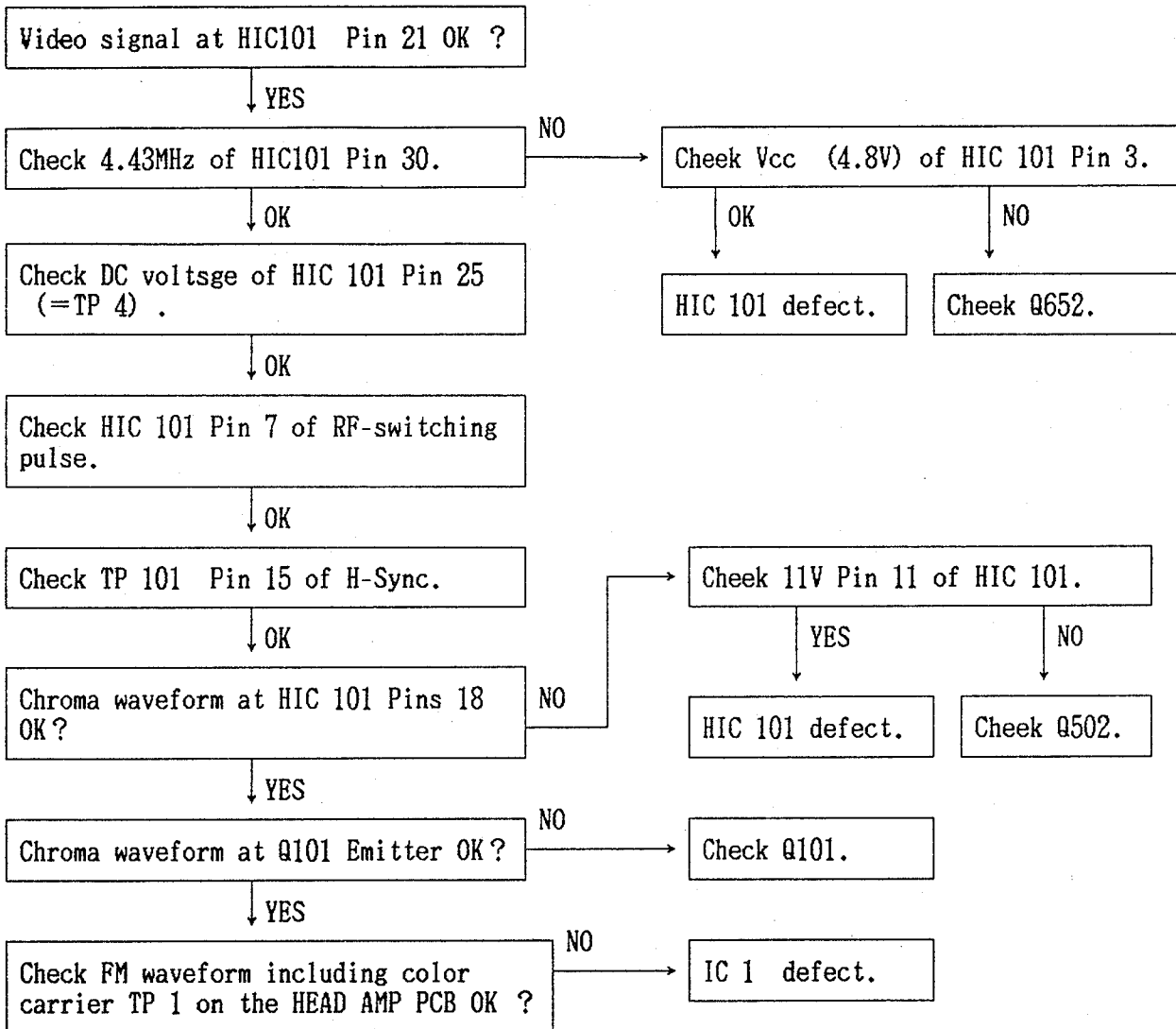
Step 13- (B)



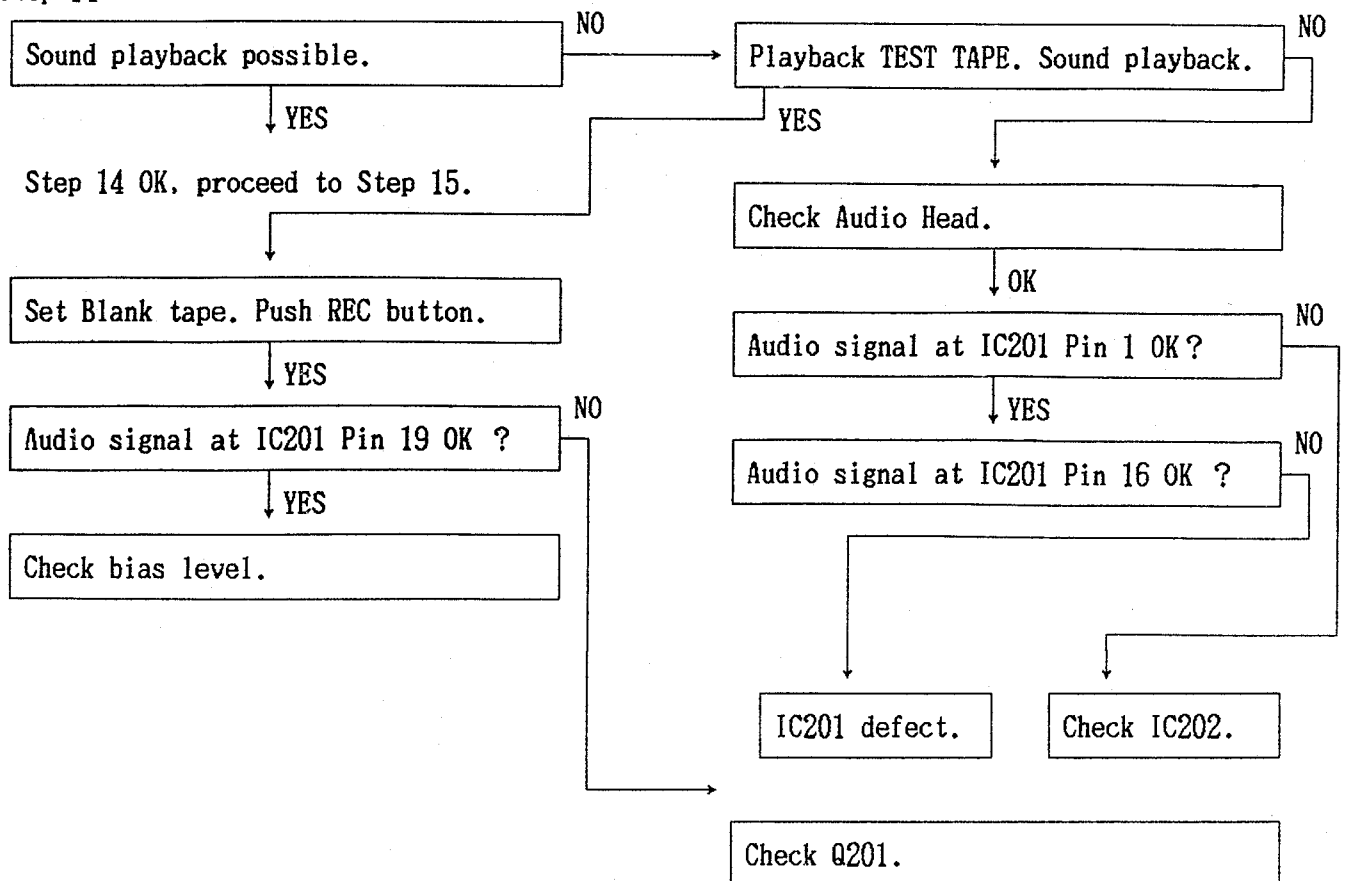
13- (C)



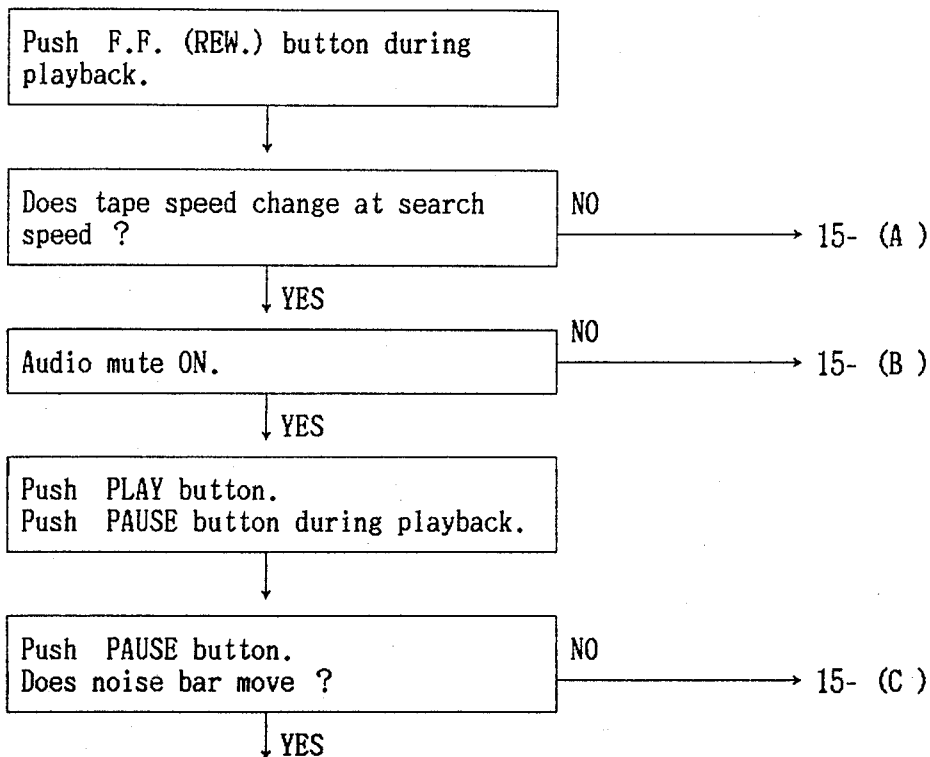
13- (D)



Step 14

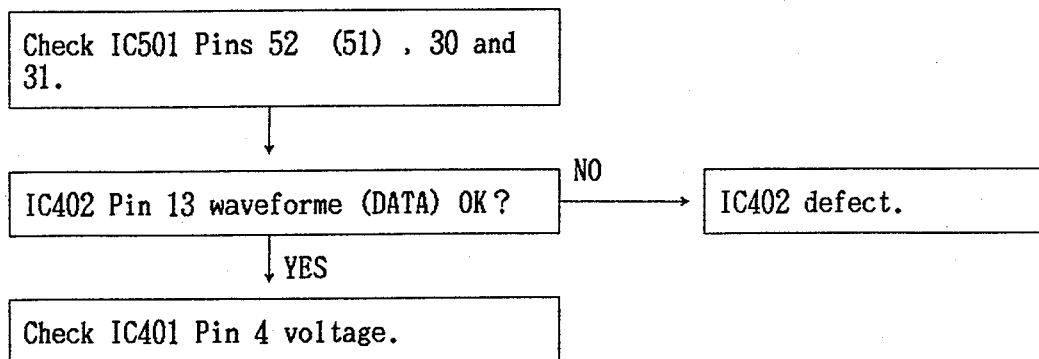


Step 15

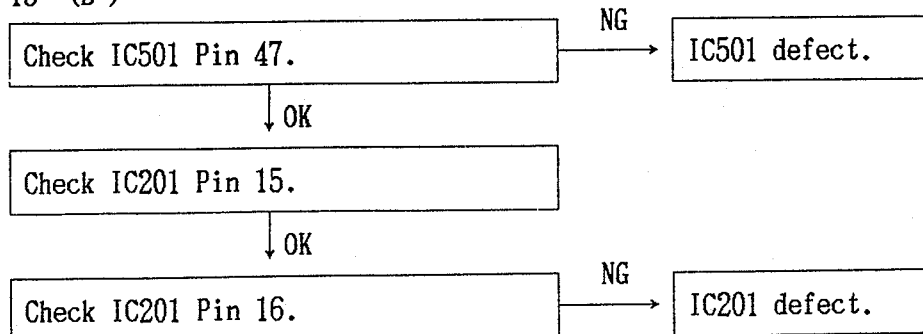


Step 15 OK, proceed to step 16.

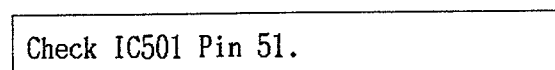
15- (A)



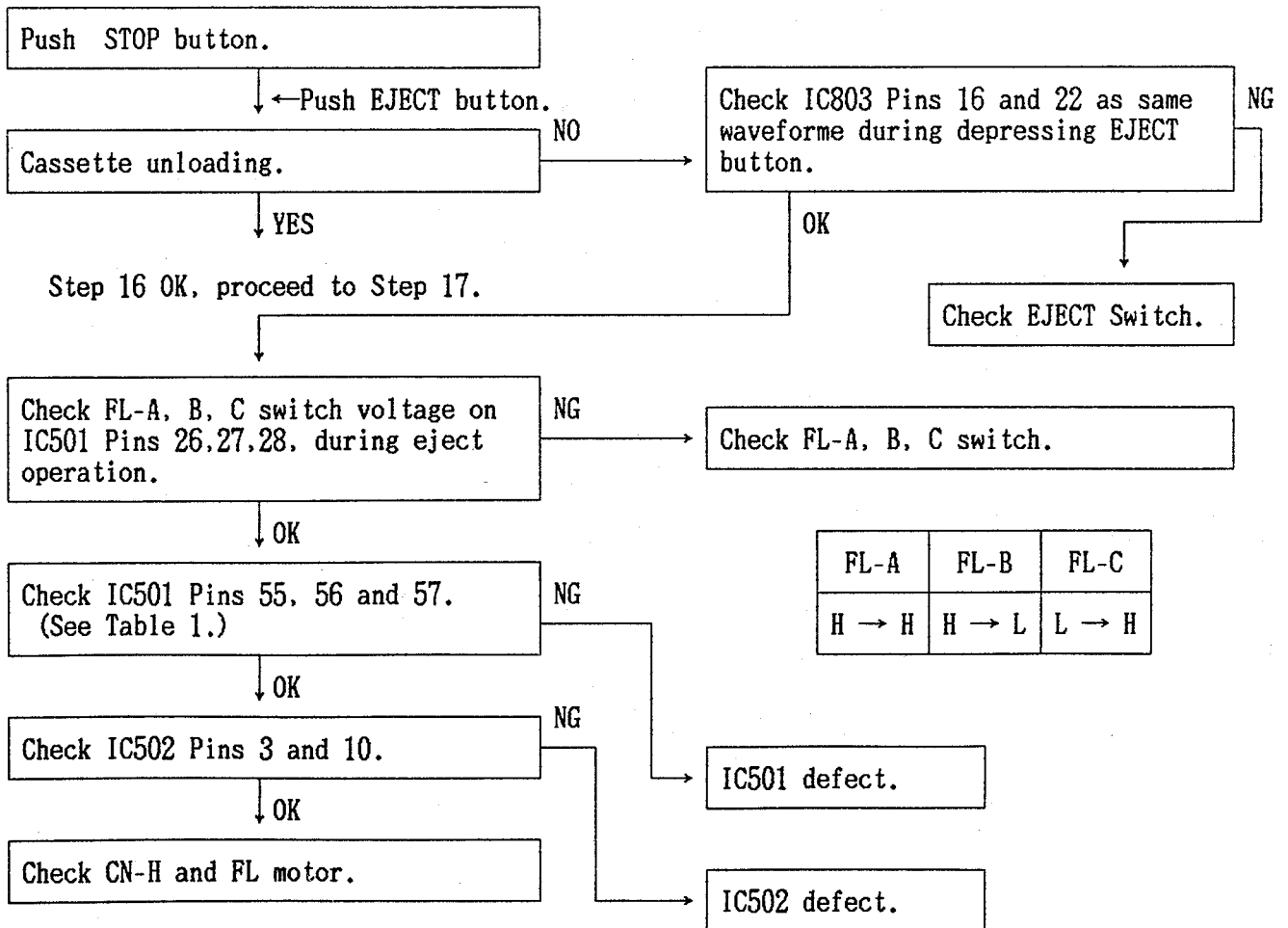
15- (B)



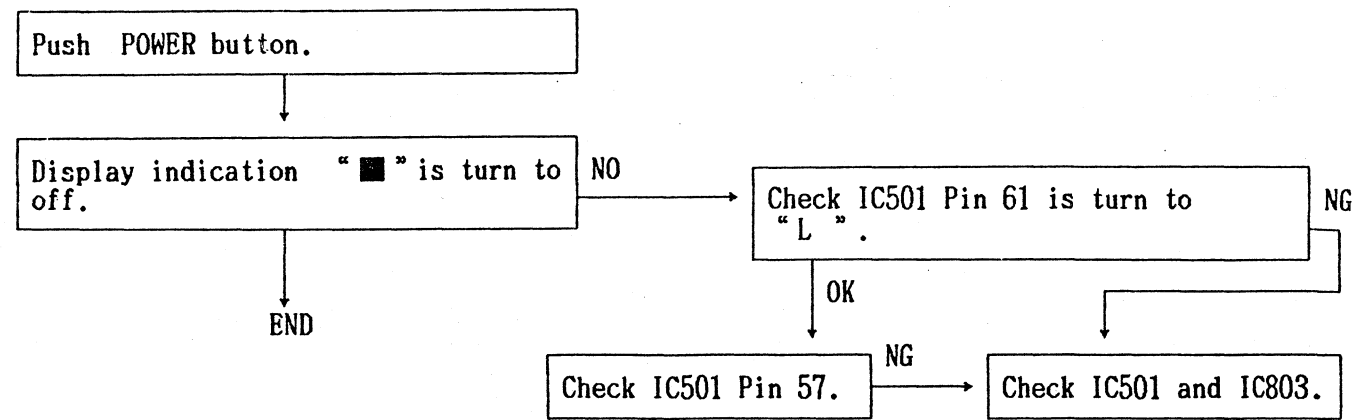
15- (C)



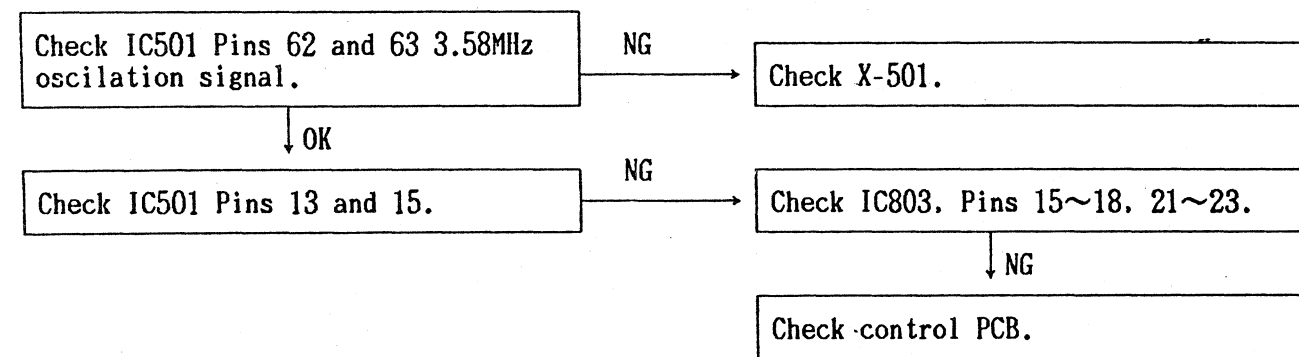
Step 16



Step 17

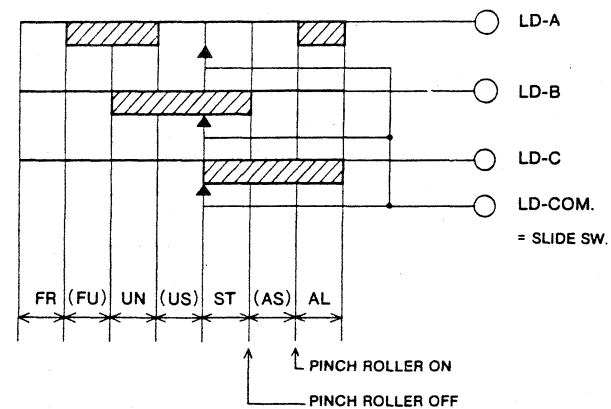


Step 18



* When SYSTEM CONTROL IC has run away SYSTEM CONTROL IC will not accept any mode. At this time, must AC CORD disconnect to reset the SYSTEM CONTROL IC.

Position of loading switch



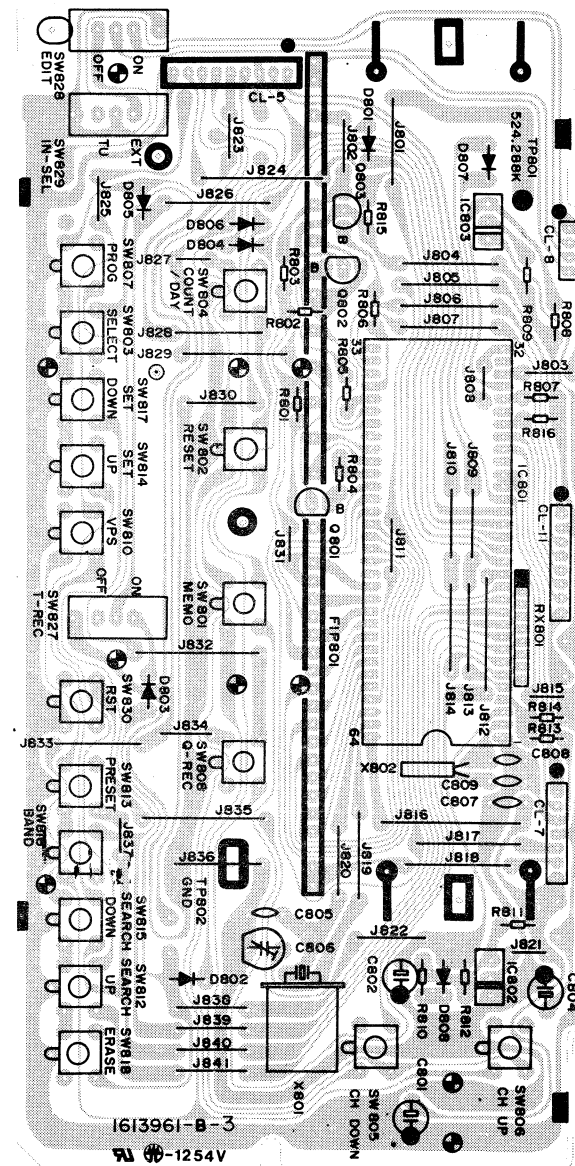
LD SW			Symbol	Position
A	B	C		
I	I	I	FR (FR LOADING)	FF. REW
O	I	I	(FU)	
O	O	I	UN (UN-LOADING)	STOP EJECT
I	O	I	(US)	
I	O	O	ST (SHORT STOP)	Loading motor is stopped temporarily at unloading.
I	I	O	(AS)	
O	I	O	AL (AFTER-LOADING)	PLAY RECPAUSE SHORT REW

O:MAKE I:BREAK
Break means intermediate position.

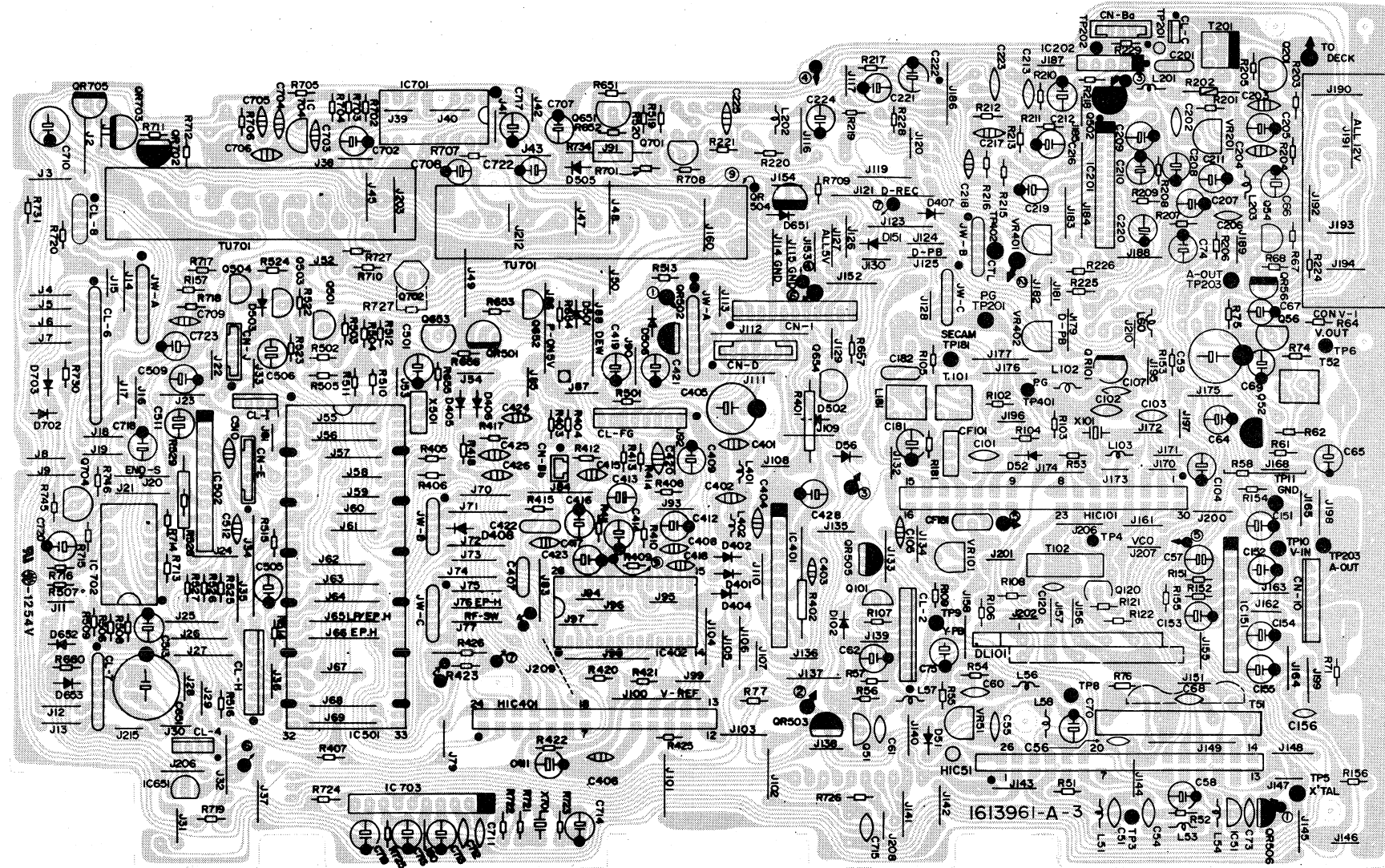
Table 2.

P.C. BOARD (TOP & BOTTOM VIEWS)

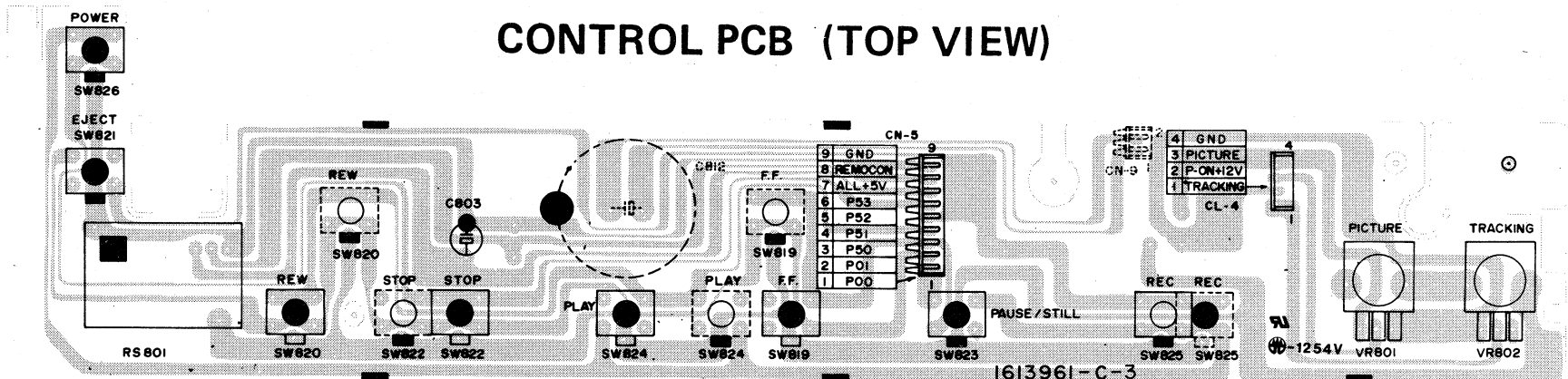
TIMER PCB (TOP VIEW)



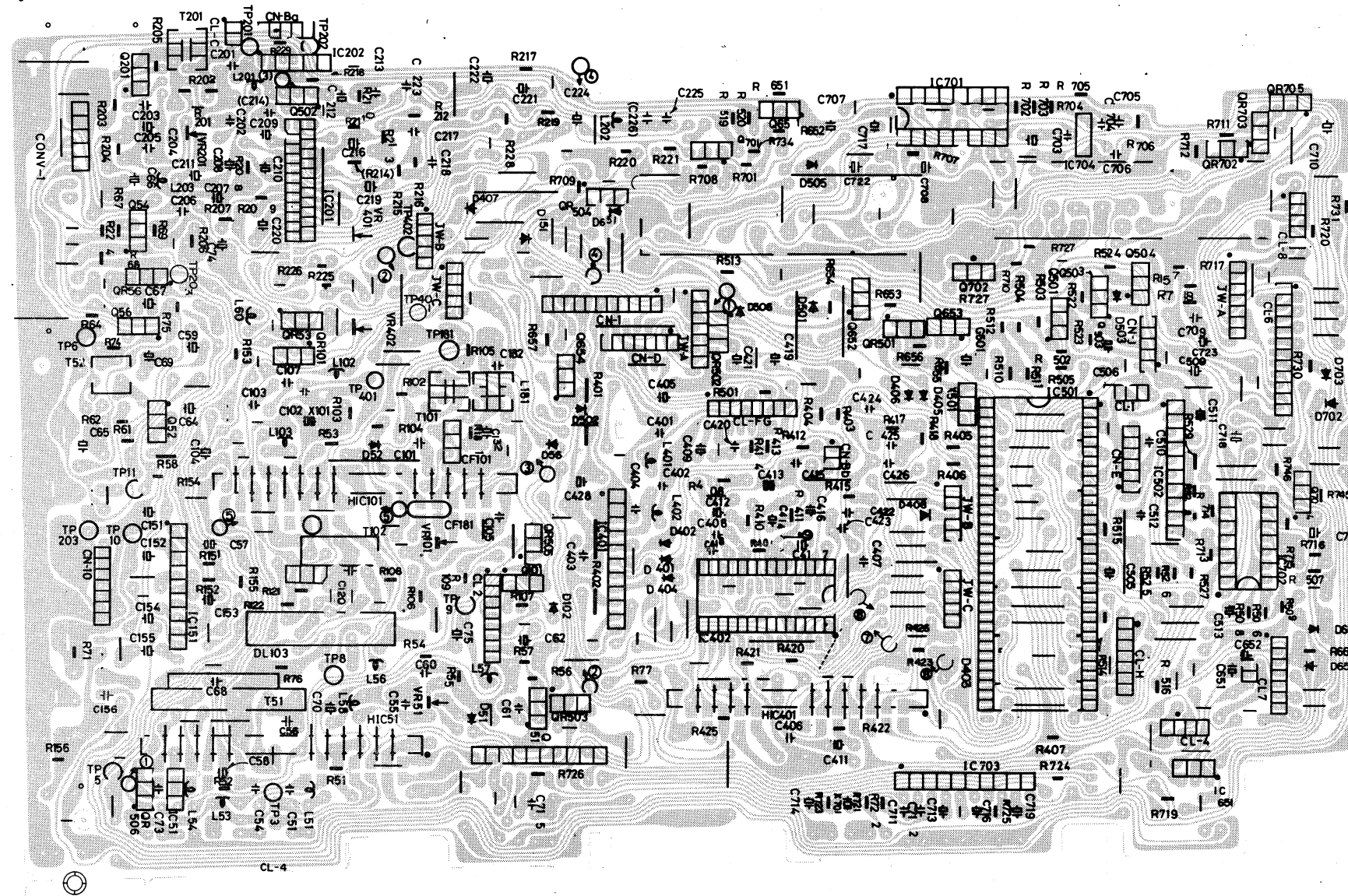
MAIN PCB (TOP VIEW)



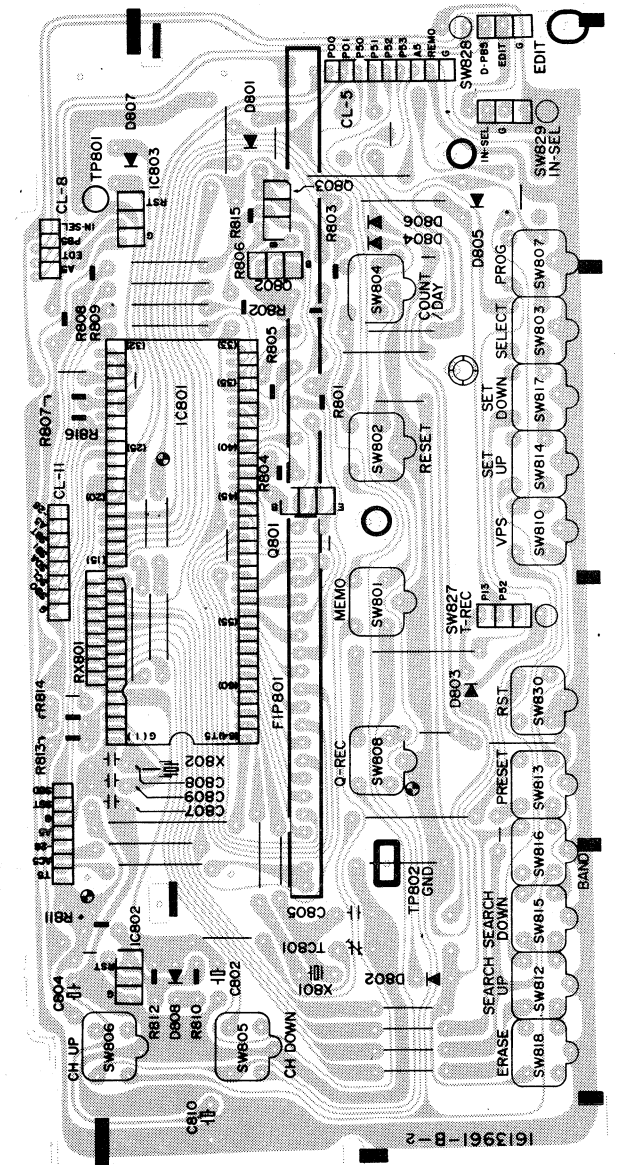
CONTROL PCB (TOP VIEW)



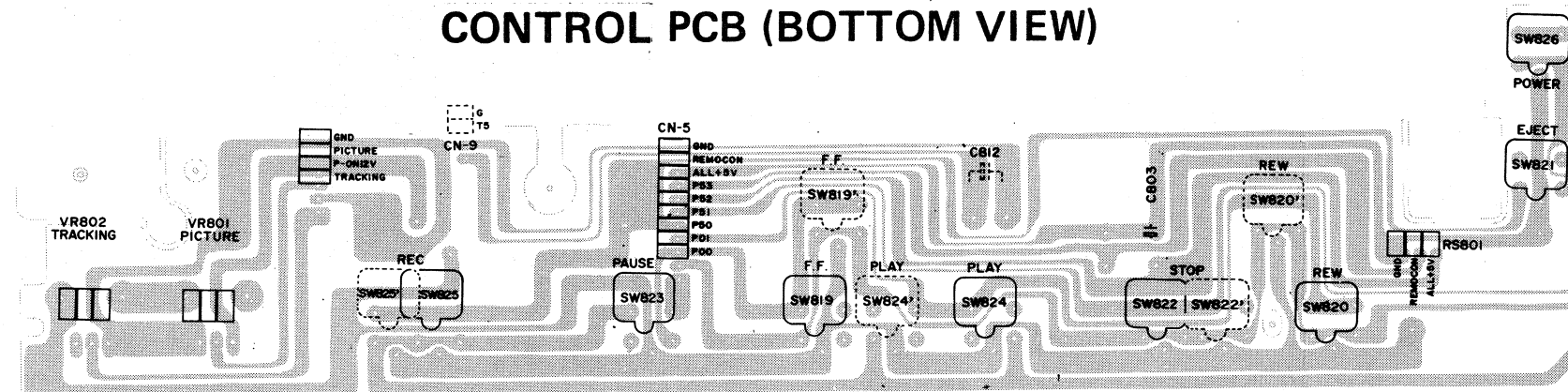
MAIN PCB (BOTTOM VIEW)



TIMER PCB (BOTTOM VIEW)

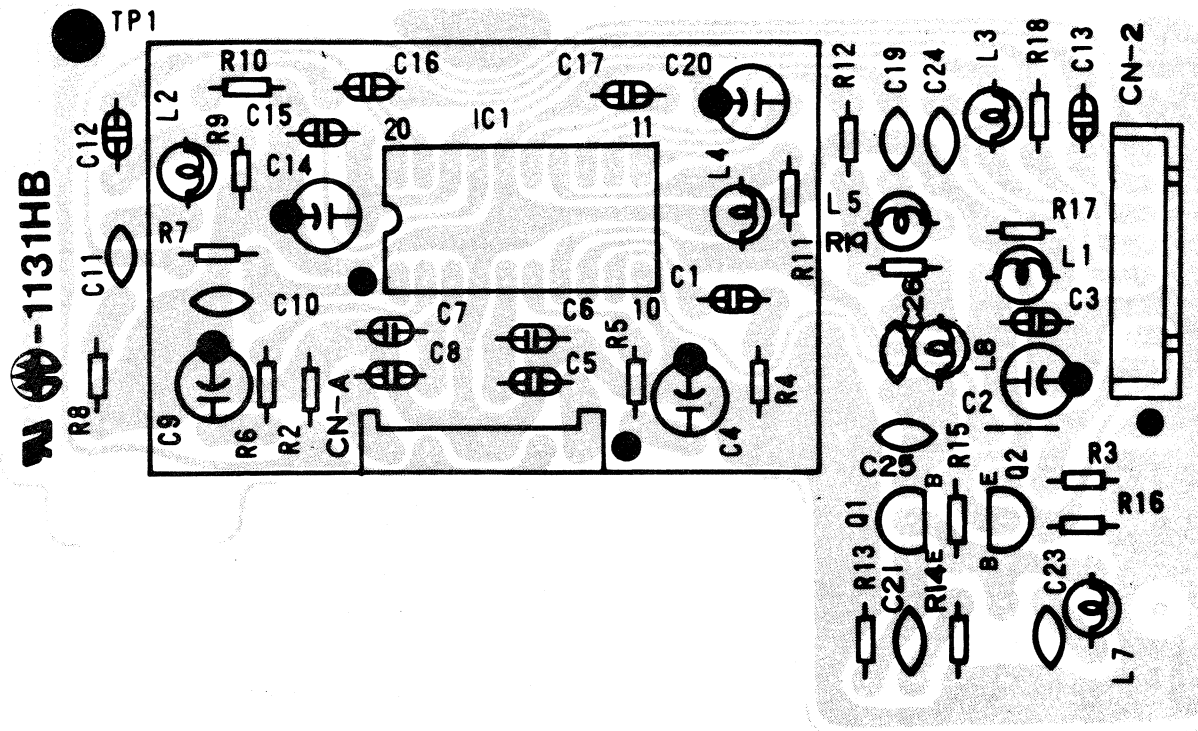


CONTROL PCB (BOTTOM VIEW)

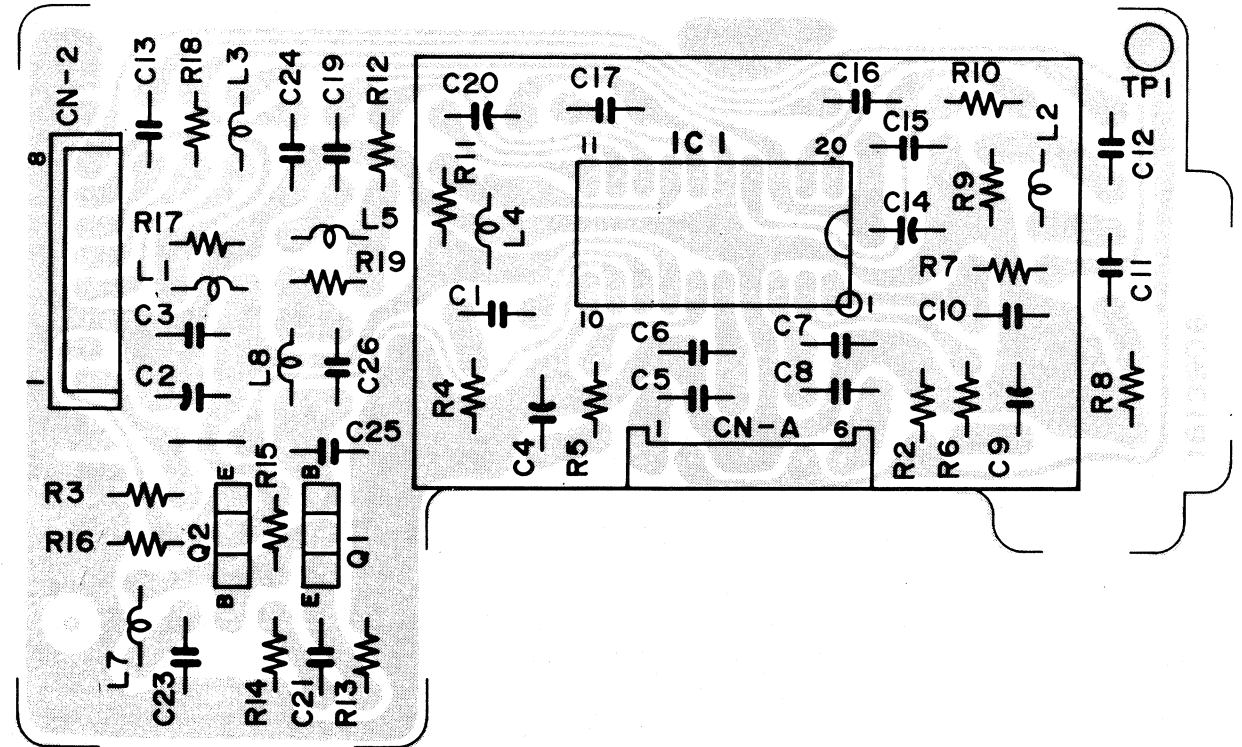


HEAD AMP PCB

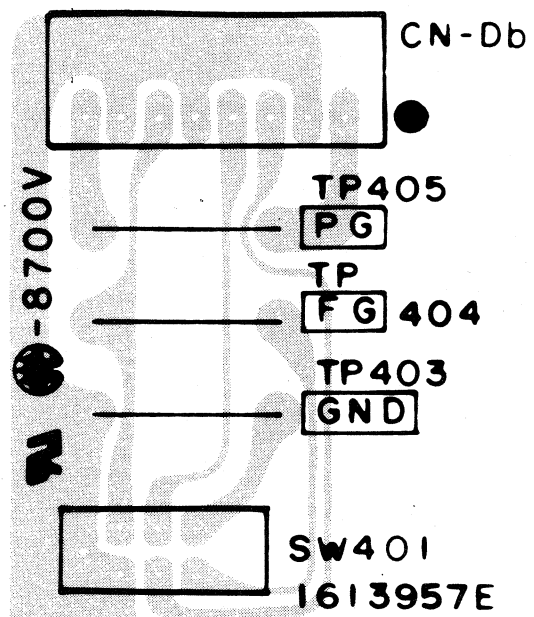
(TOP VIEW)



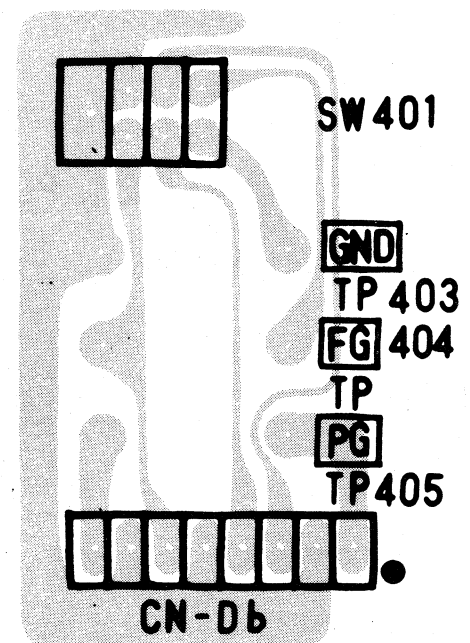
(BOTTOM VIEW)



(TOP VIEW)



(BOTTOM VIEW)



CL-1

F603 T-630 mA

F604 T-2A

BLUE F601 T-200 mA

BROWN F603 T-630 mA

T601

1613903-1

-1254V

IC601 IC602 IC603 IC604

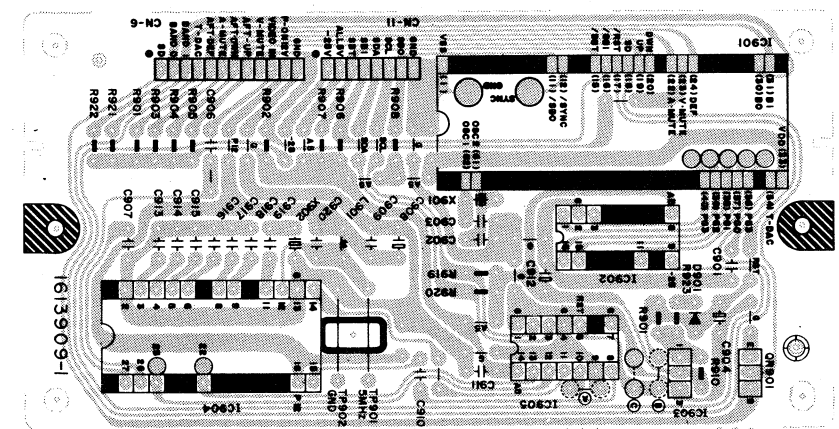
D601 D602 D603 D604 D605 D606 D607 D608 D609 D610 D611

C601 C602 C603 C604 C605 C606 C607 C608 C609 C610 C611 C612

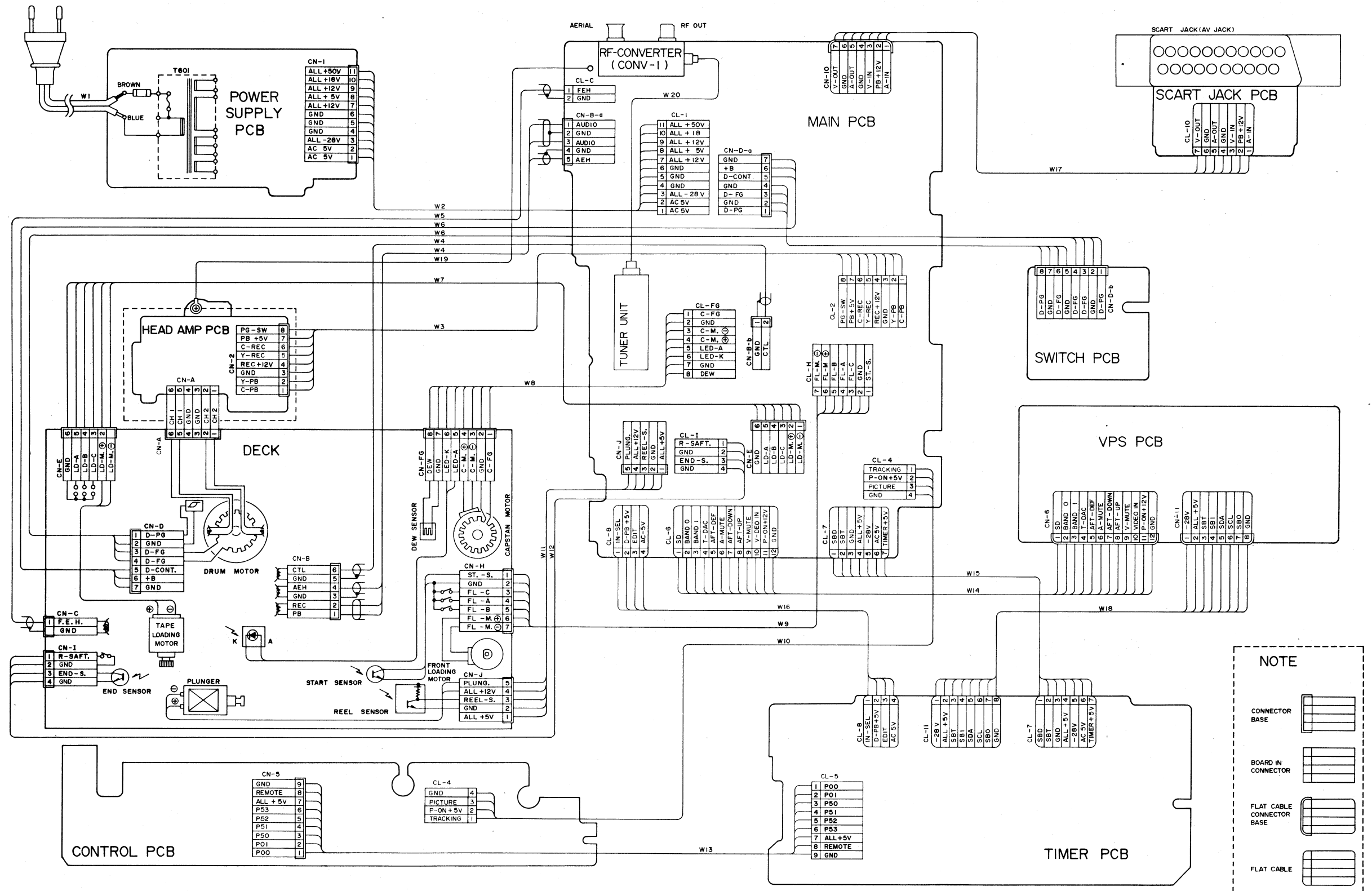
R601 R602 R603 R604 R605 R606

V2 PI

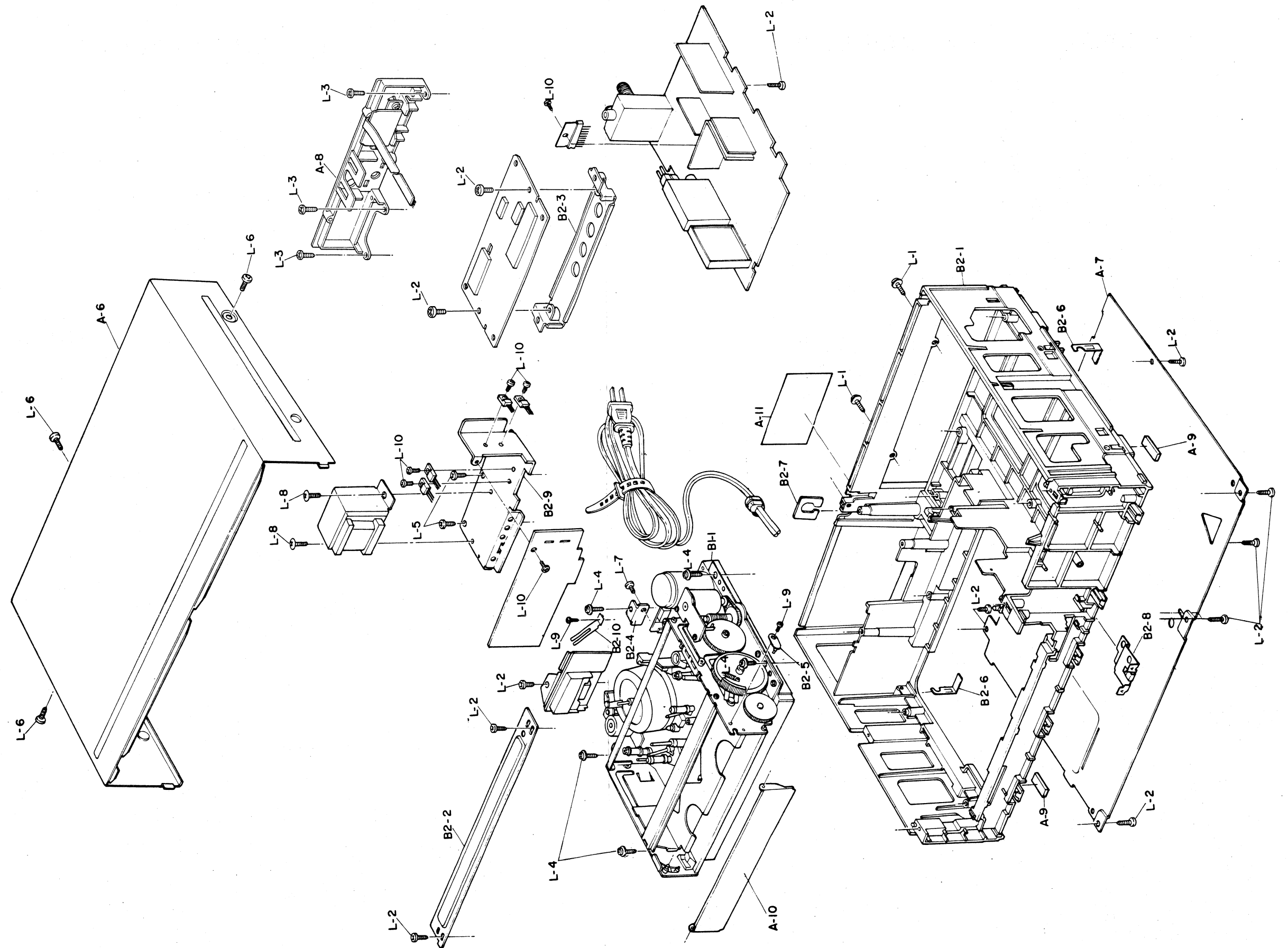
VPS PCB



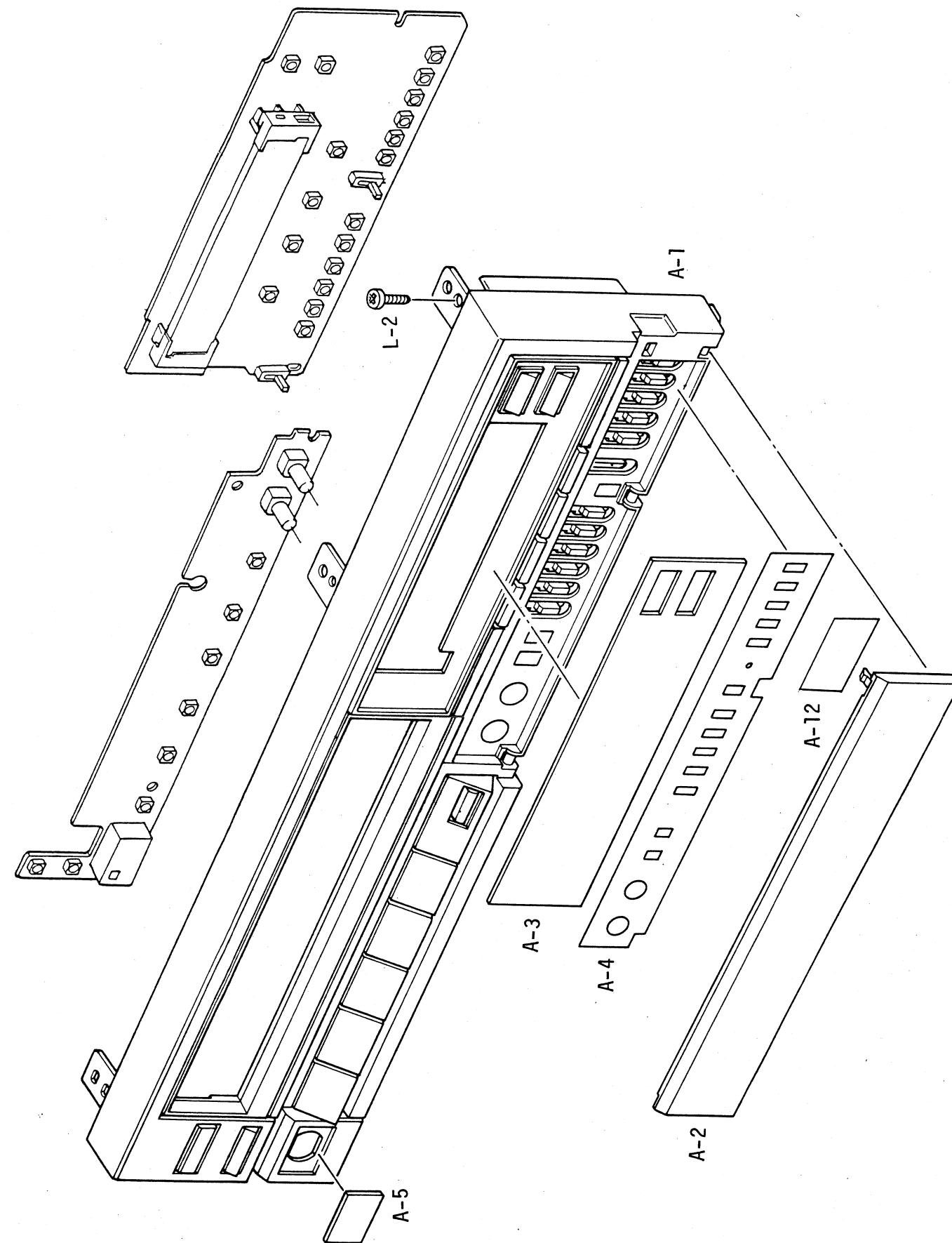
WIRING DIAGRAM



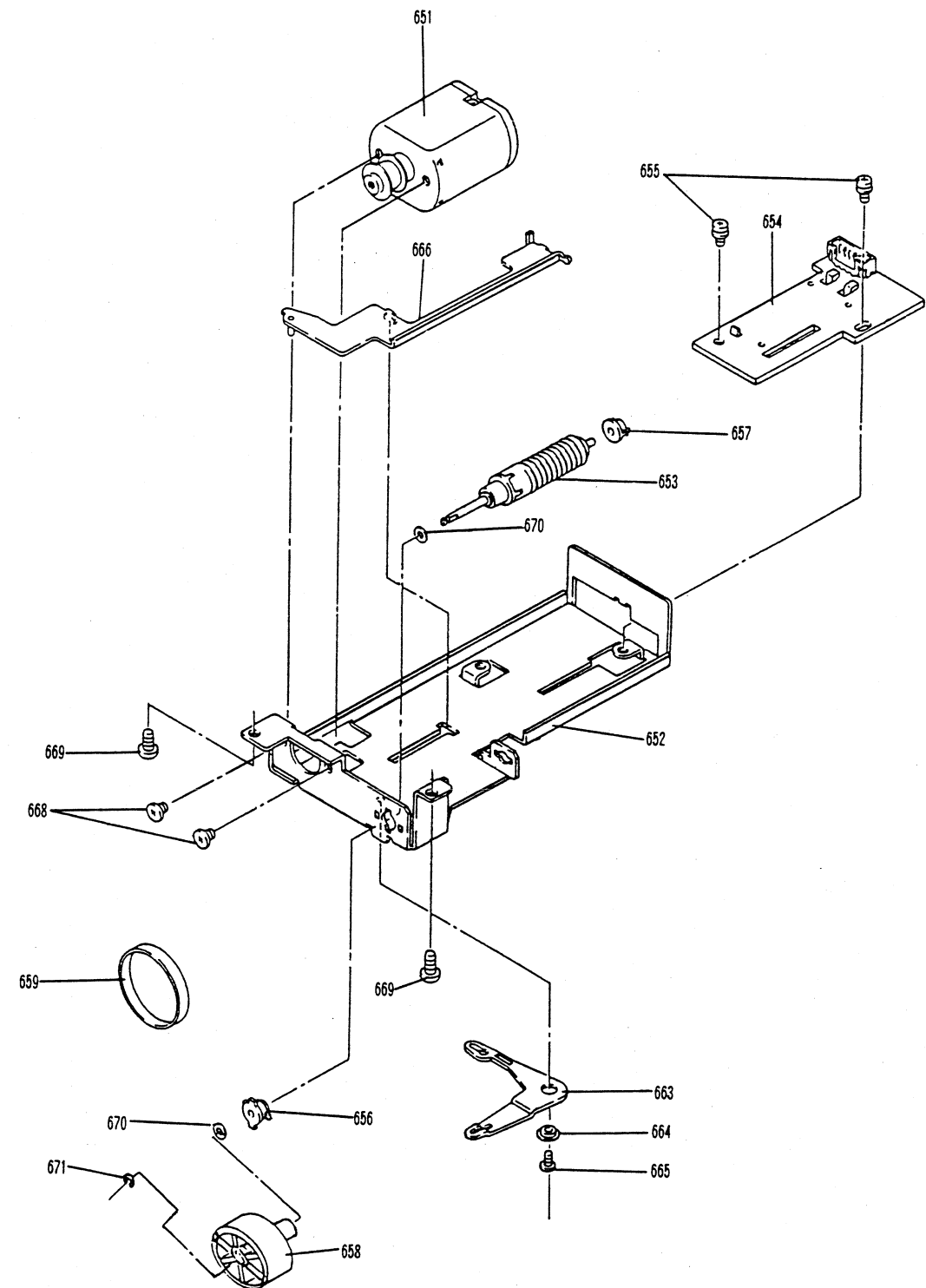
EXPLODED VIEW (CABINET)



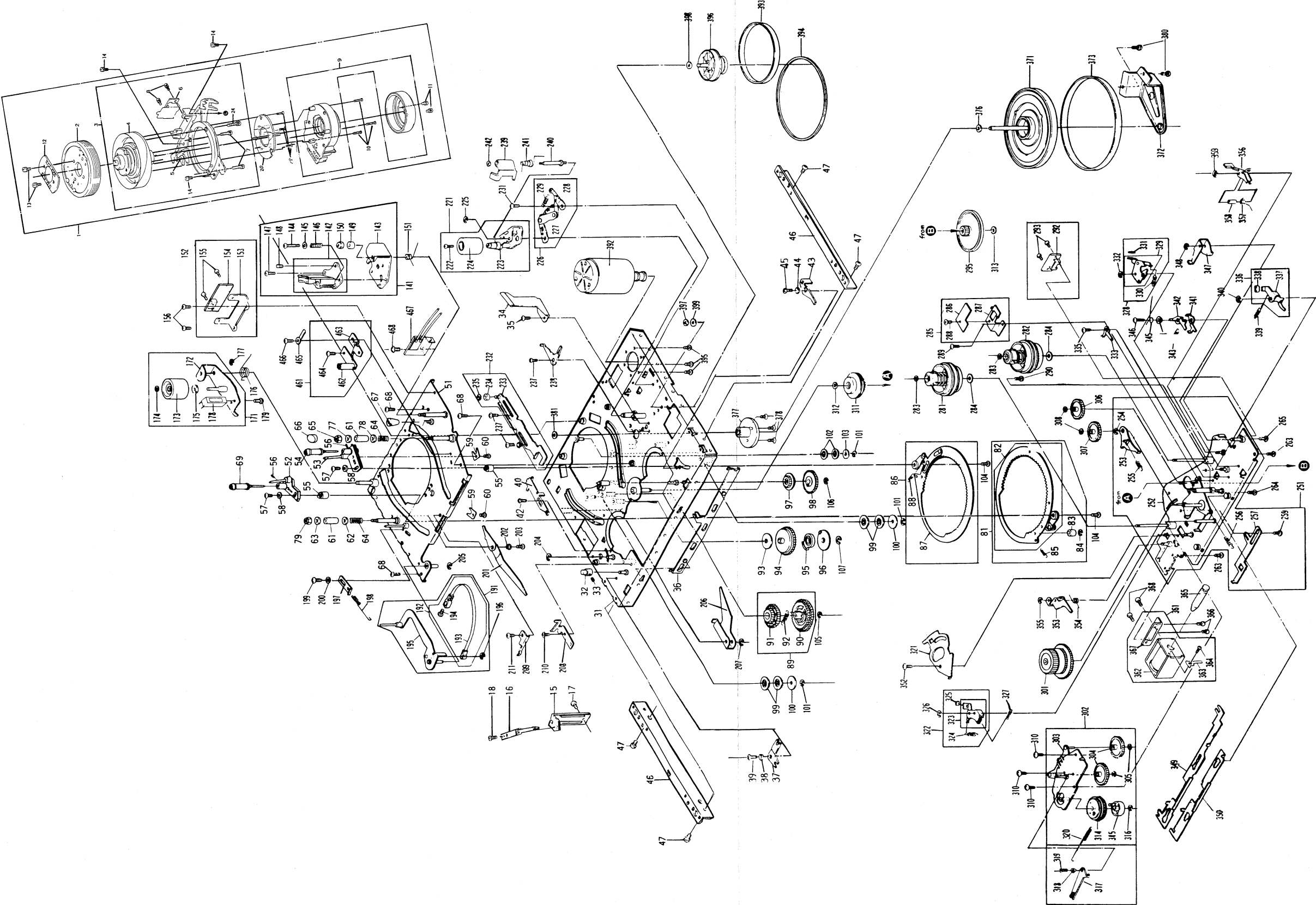
EXPLODED VIEW (CABINET 2)



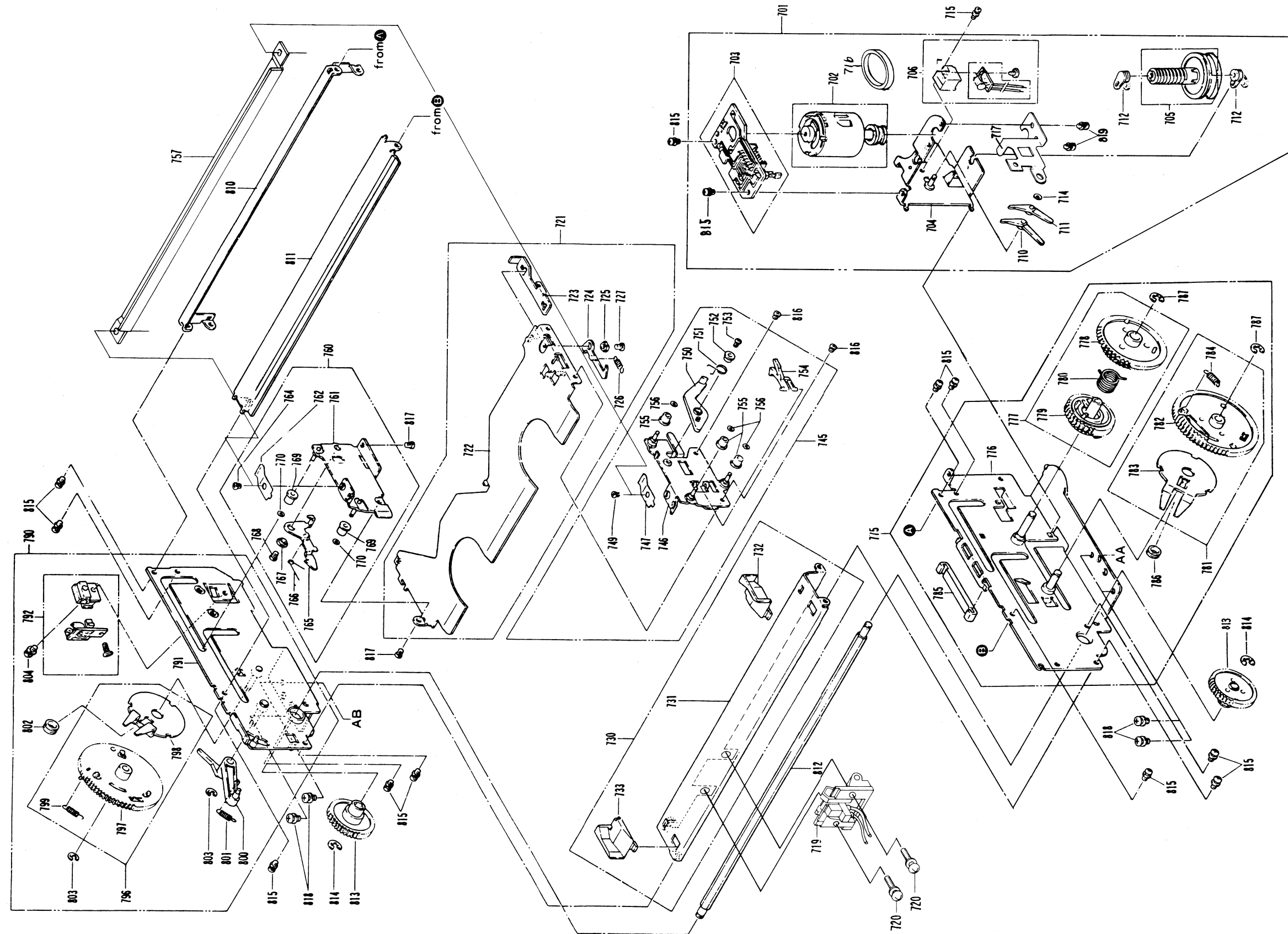
EXPLODED VIEW (DECK 1)



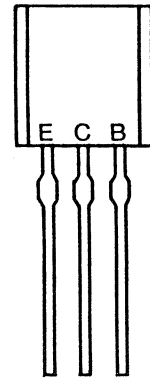
EXPLODED VIEW (DECK 2)



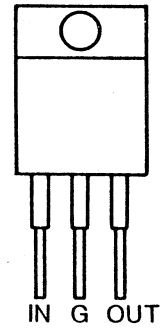
EXPLODED VIEW (DECK 3)



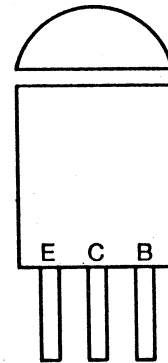
12. LEAD IDENTIFICATION 1 (IC, Transistor)



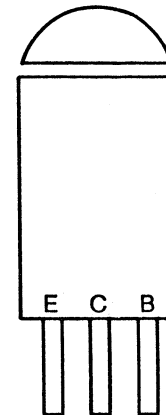
2SA933
2SC1740
2SA608SP
2SA1317
2SA536SP
2SC3393
2SK128
2SD1468SP
2SD1012



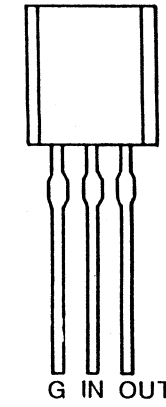
AN78M05F
NJM78M05FA
AN812F
NJM7812FA
AN7818F
NJM7818FA
AN78L05
NJM78L05FA



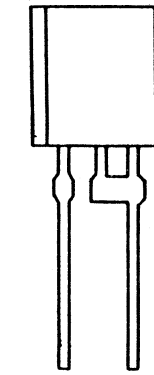
2SA1741A
2SC2058
2SA1038
2SA1016K



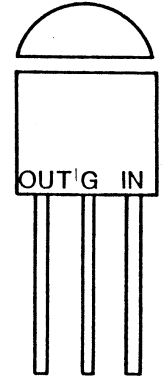
2SA934
2SC2060
2SB1010
2SD1384
2SB892
2SD400
2SD1207



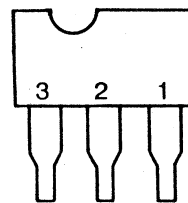
DTA124
DTC124
DTA143
DTC144WS
2SC3400
2SA1346



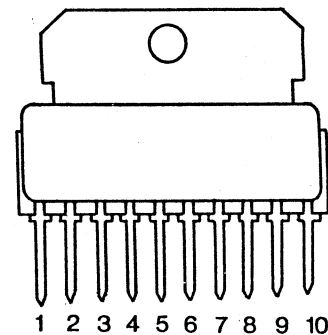
L5631



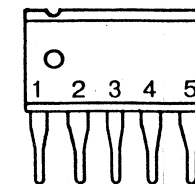
AN78L05
NJM78L05A



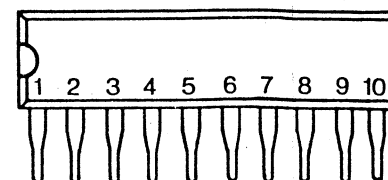
MN1280M
MN1280R
MN1280Q



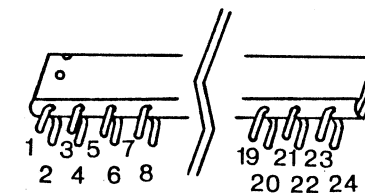
BA6219B
BA6238A
TA7288P



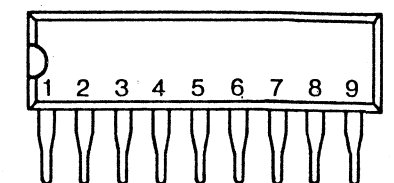
BA7755



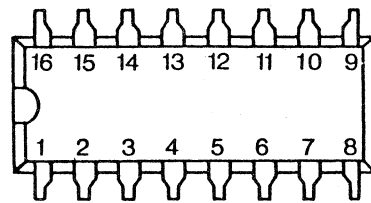
LA7210



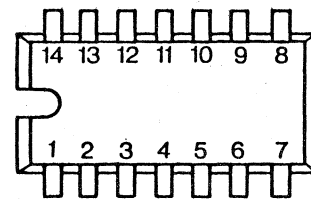
BA7751LS
BA7751ALS



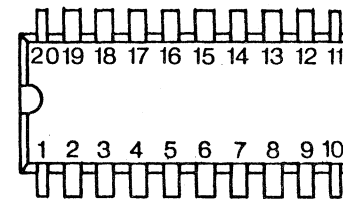
LVA508S



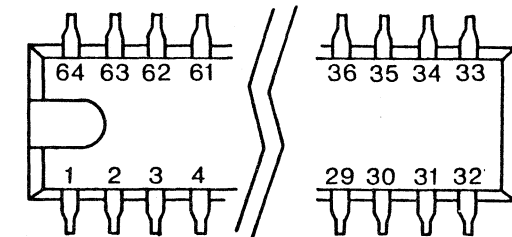
LA7913
MN1225



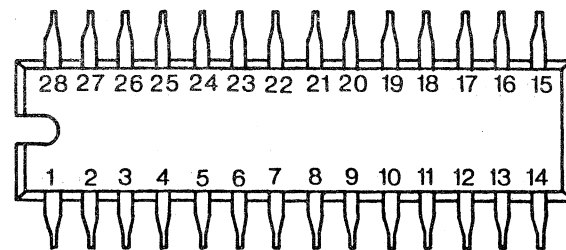
AN6912
LA6339
BA10339
NJM2901N
14D0320
14D0271



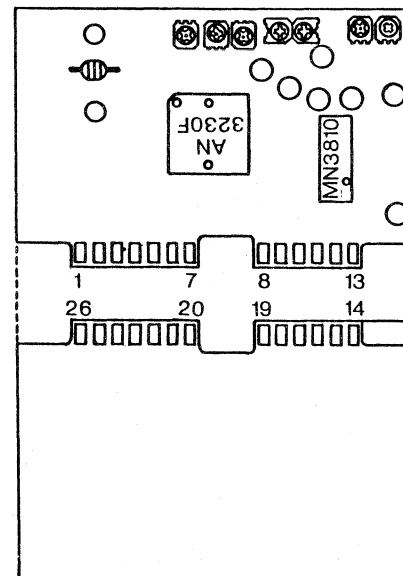
AN3331K



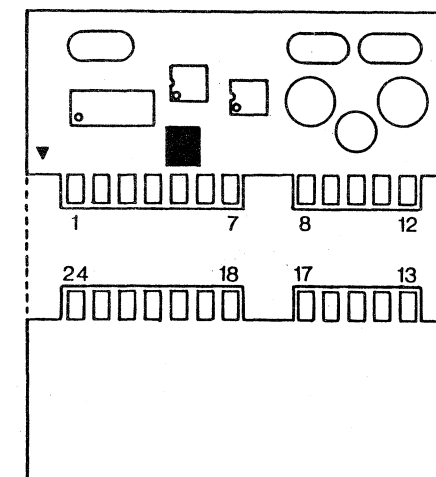
14DN244C
14DN258
14D259



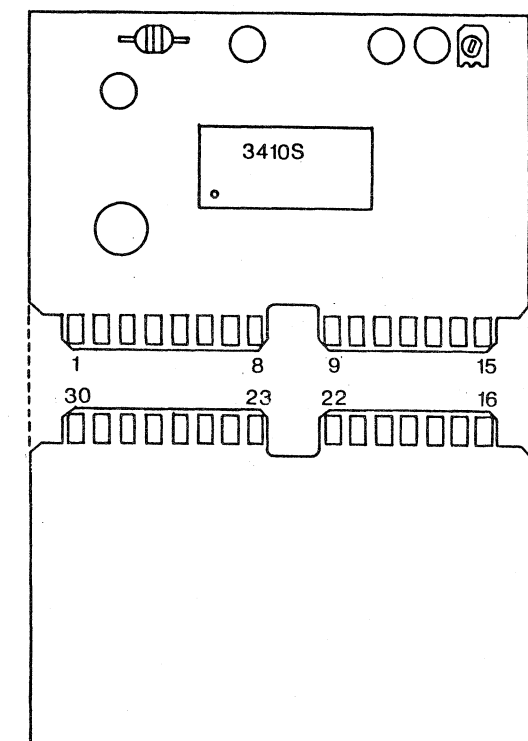
14DN300
14D0301
14D0271



1812119
(VIDEO-Y)
HIC 51



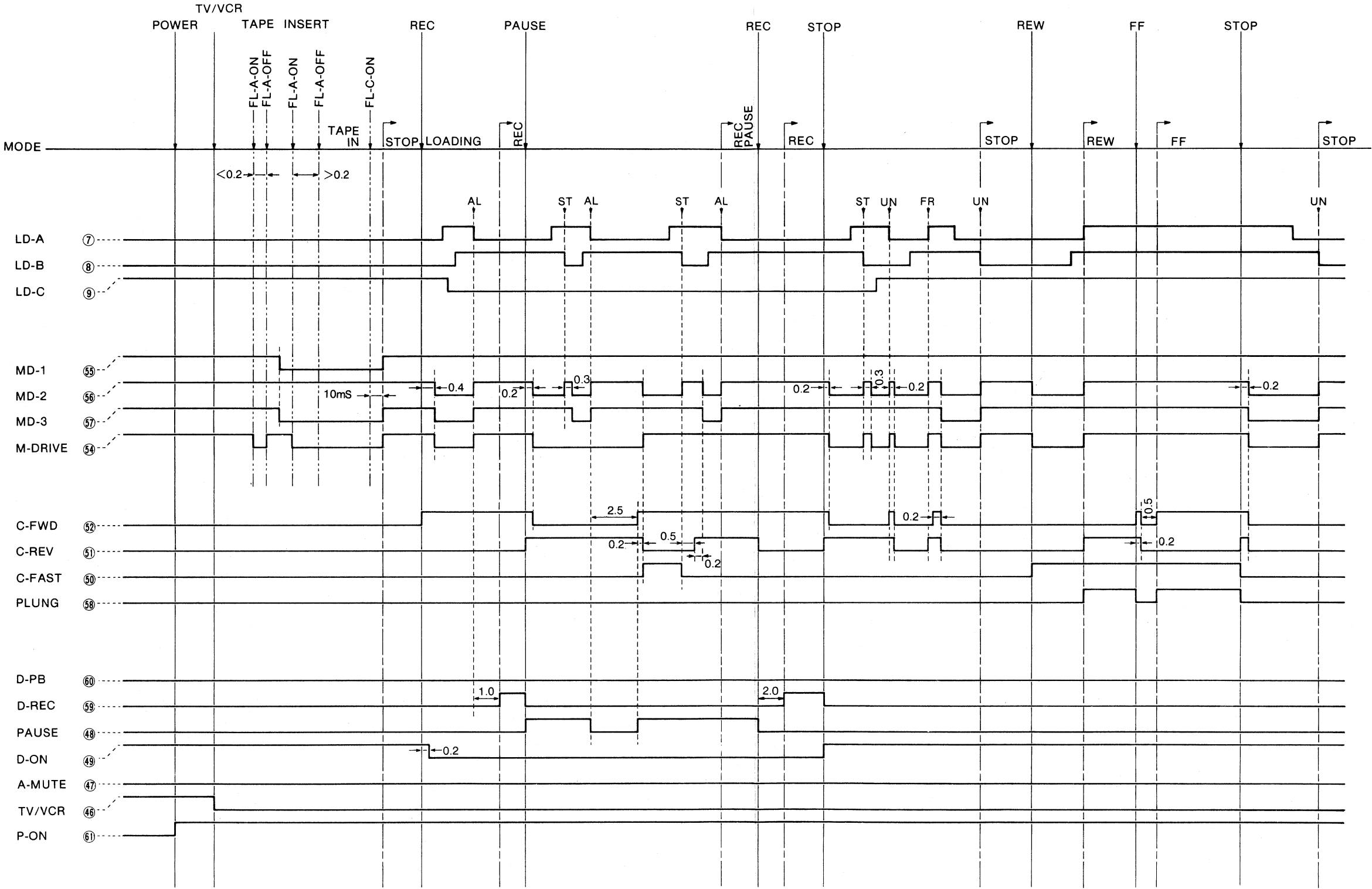
1812120
(SERVO)
HIC 401



1812117
(VIDEO-C)
HIC 101

SYSTEM CONTROL TIMING CHARTS

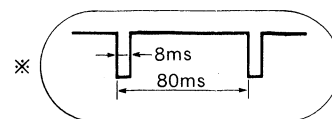
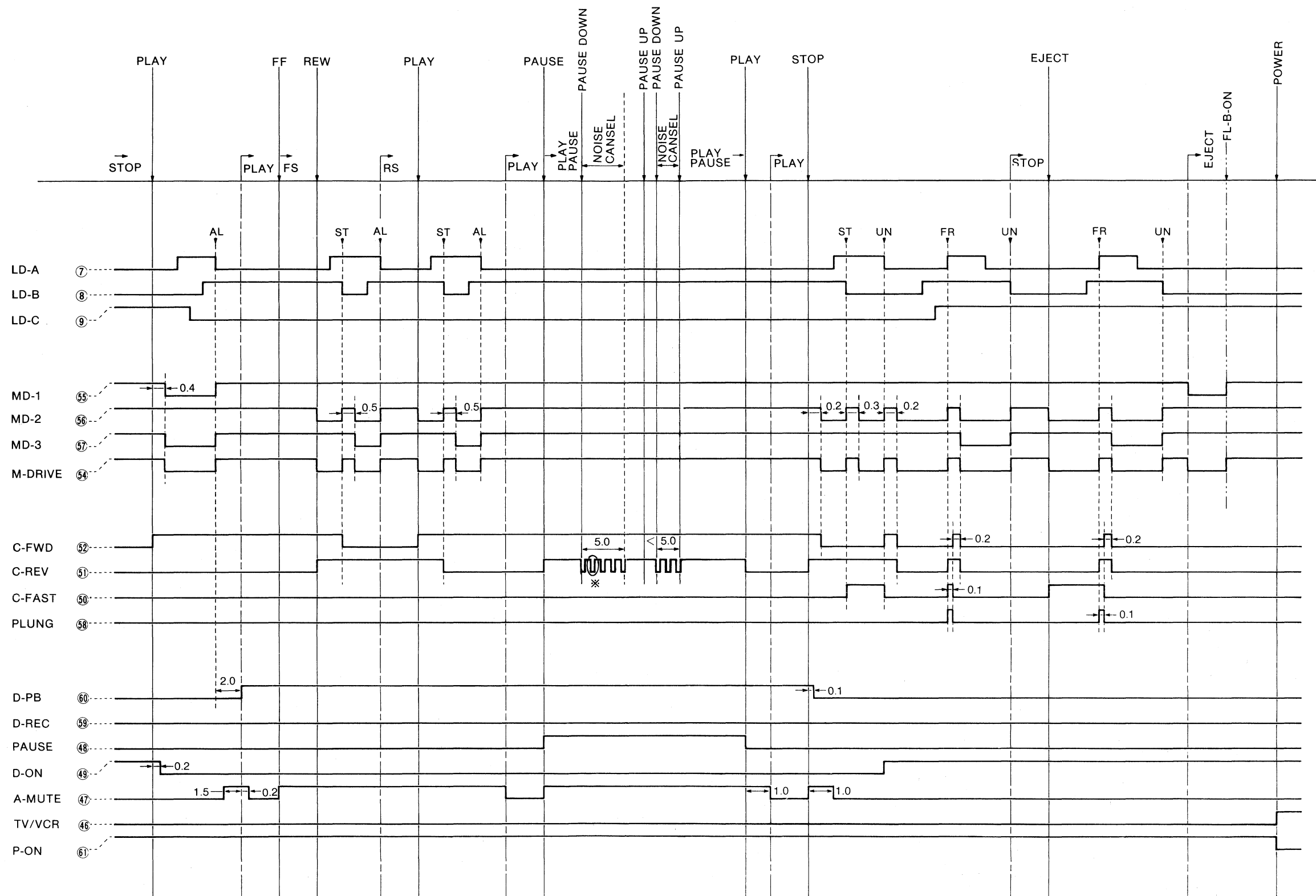
1 POWER→TV/VCR→TAPE INSERT→REC→PAUSE→REC→STOP→REW→FF→STOP



NOTICE

All time values are in second.

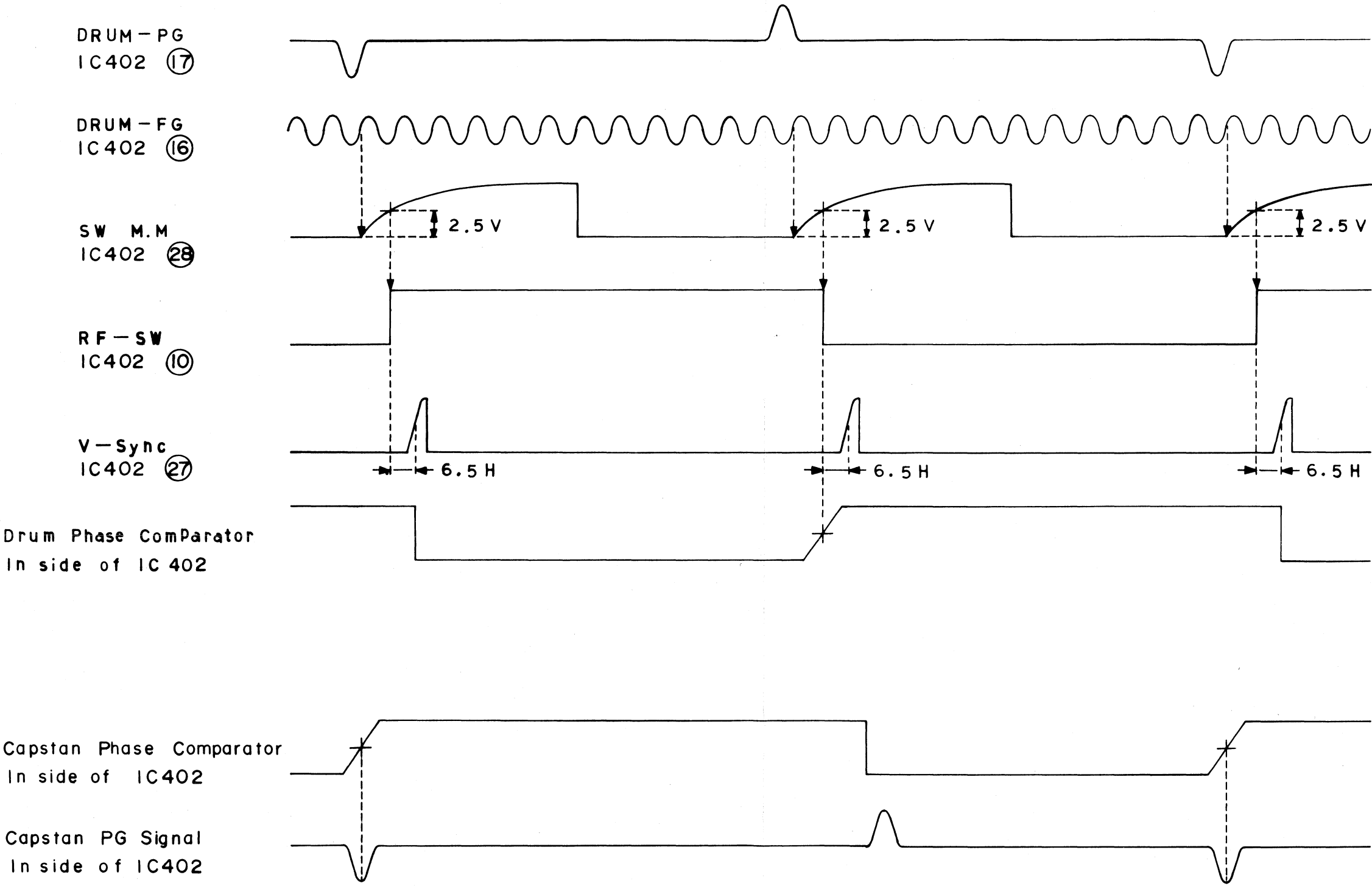
2 STOP→PLAY→FF(FS)→REW(RS)→PLAY→PAUSE→NOISE CANSEL→PAUSE→PLAY→STOP→EJECT→POWER



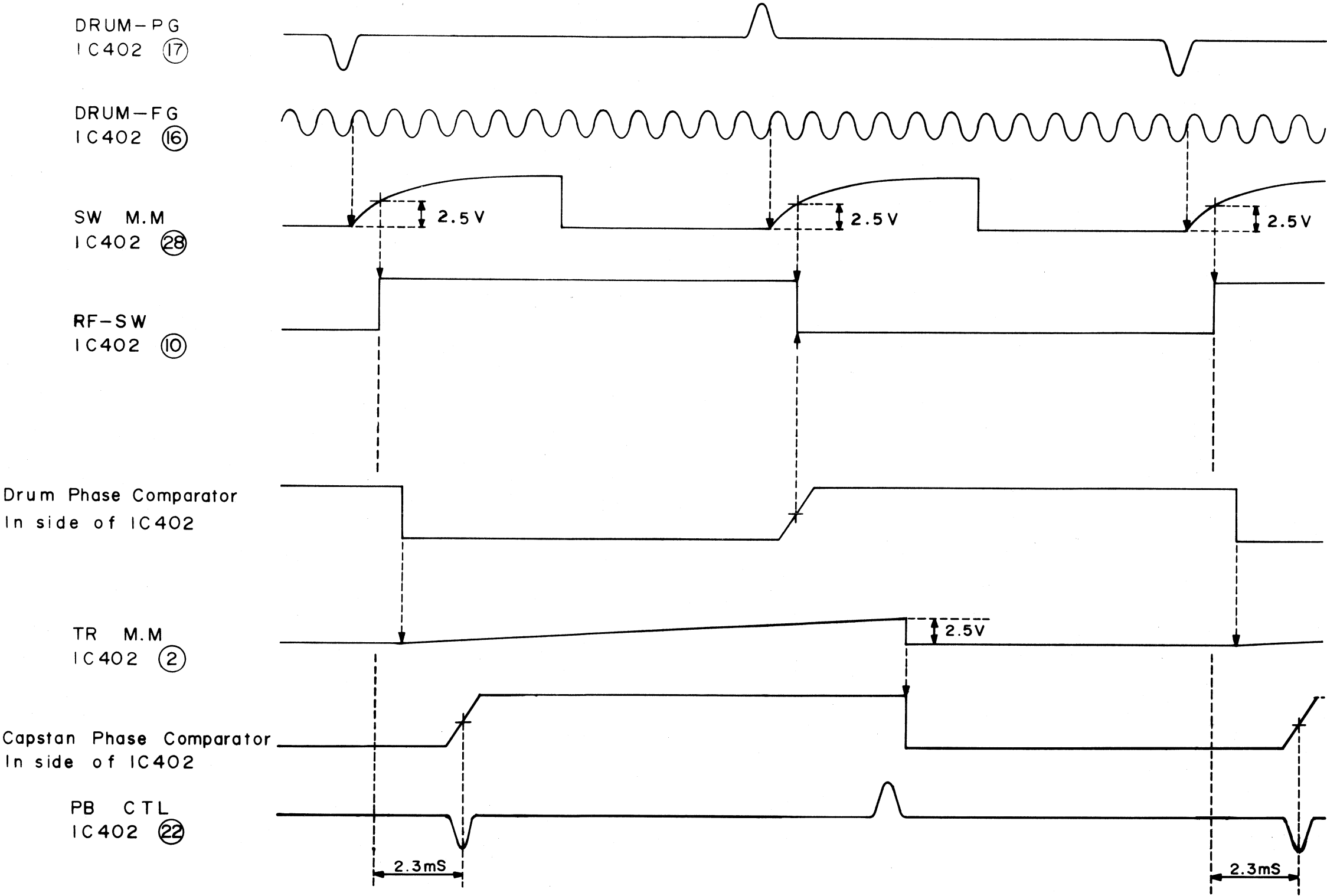
Under "NOISE CANSEL MODE"

If "NOISE CANSEL MODE" is more than "5"sec, it will transfer to "PAUSE MODE" automatically.

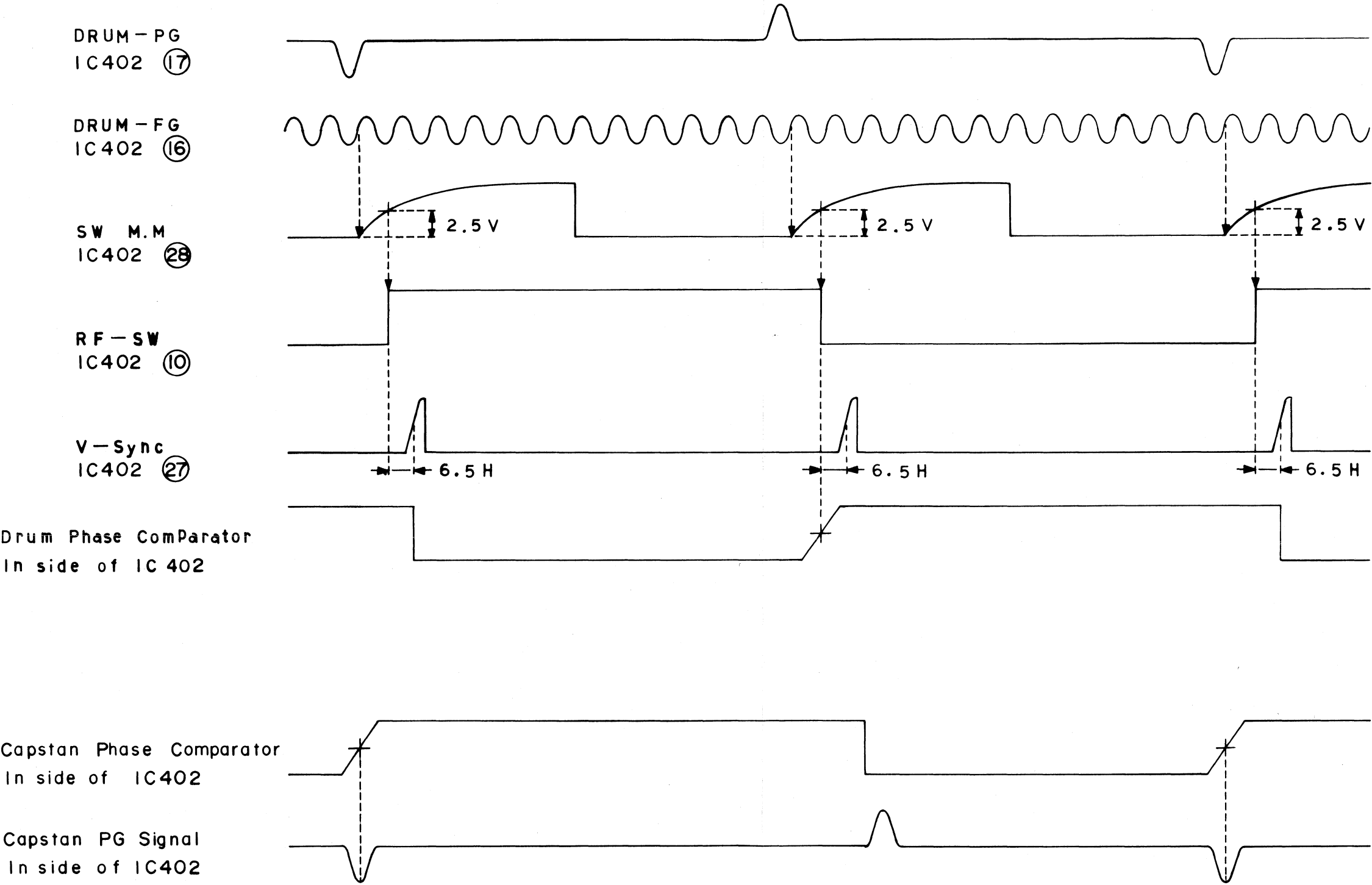
DRUM AND CAPSTAN TIMING CHARTS (RECORD MODE)



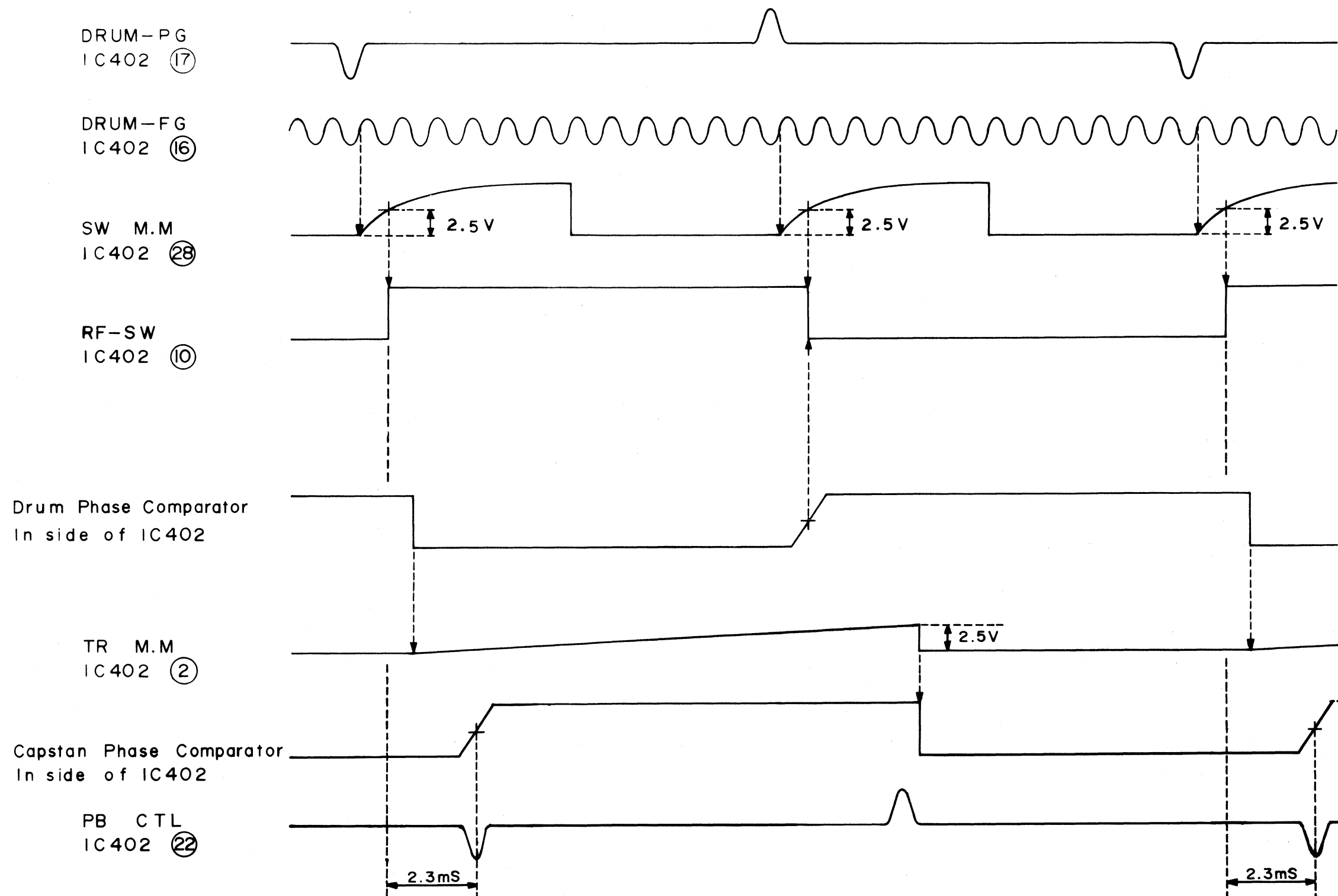
DRUM AND CAPSTAN TIMING CHARTS (PLAYBACK MODE)

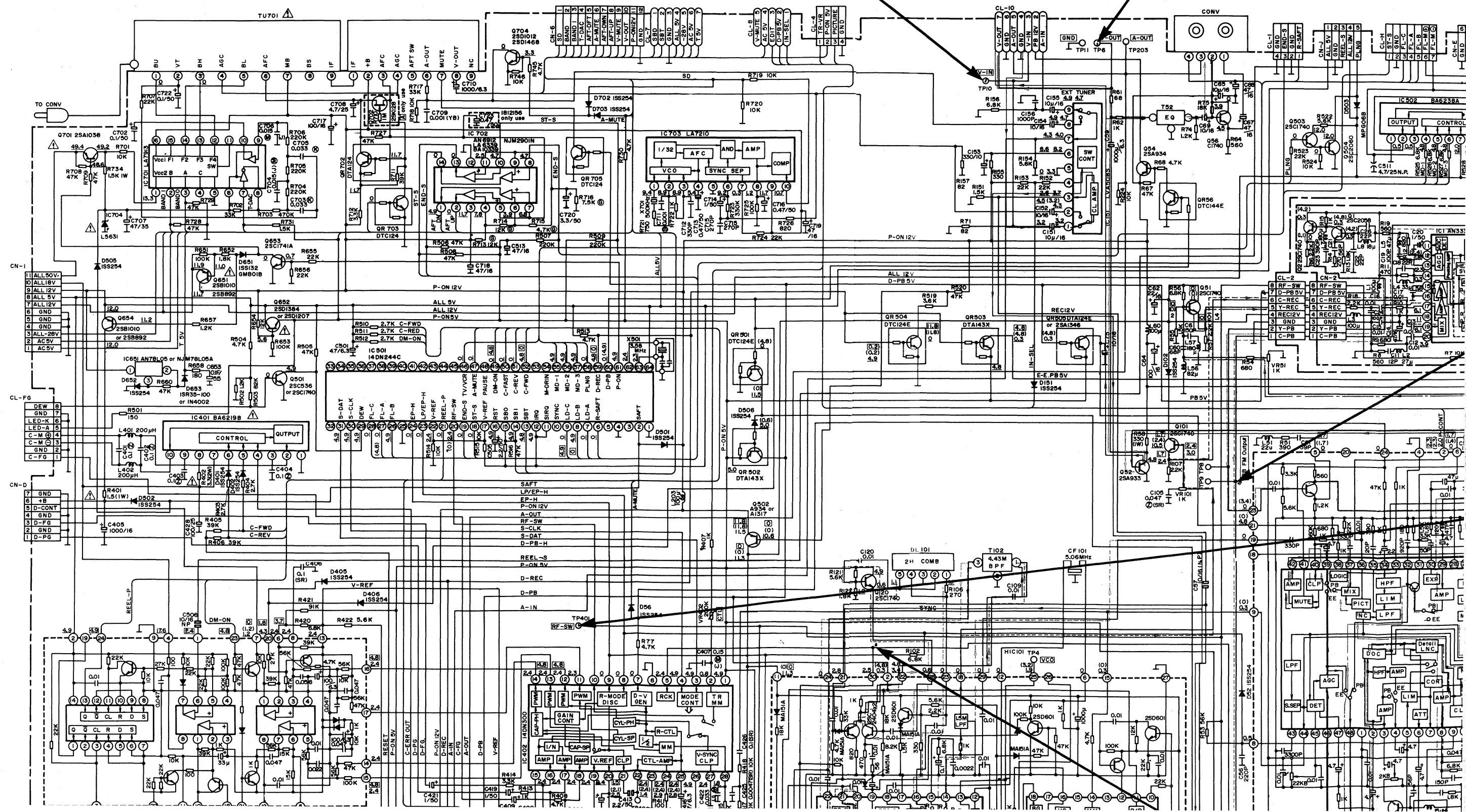
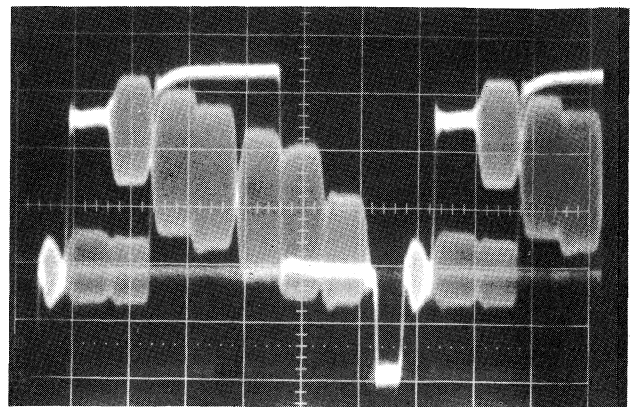


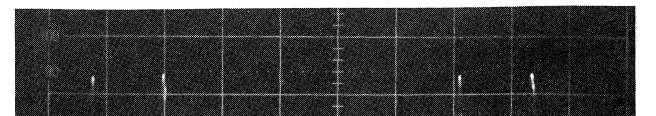
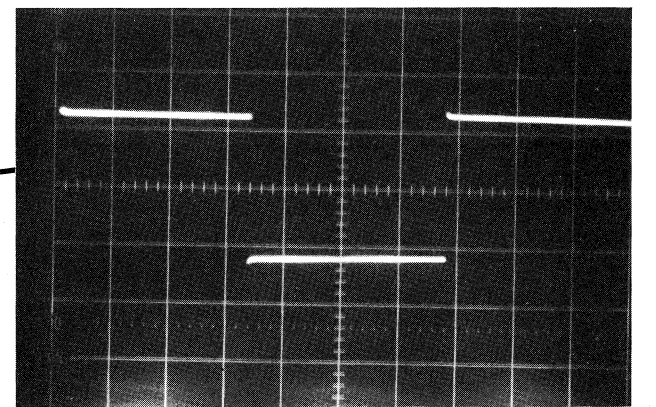
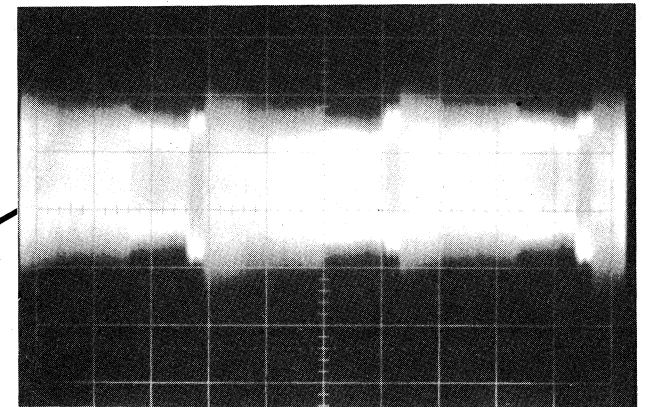
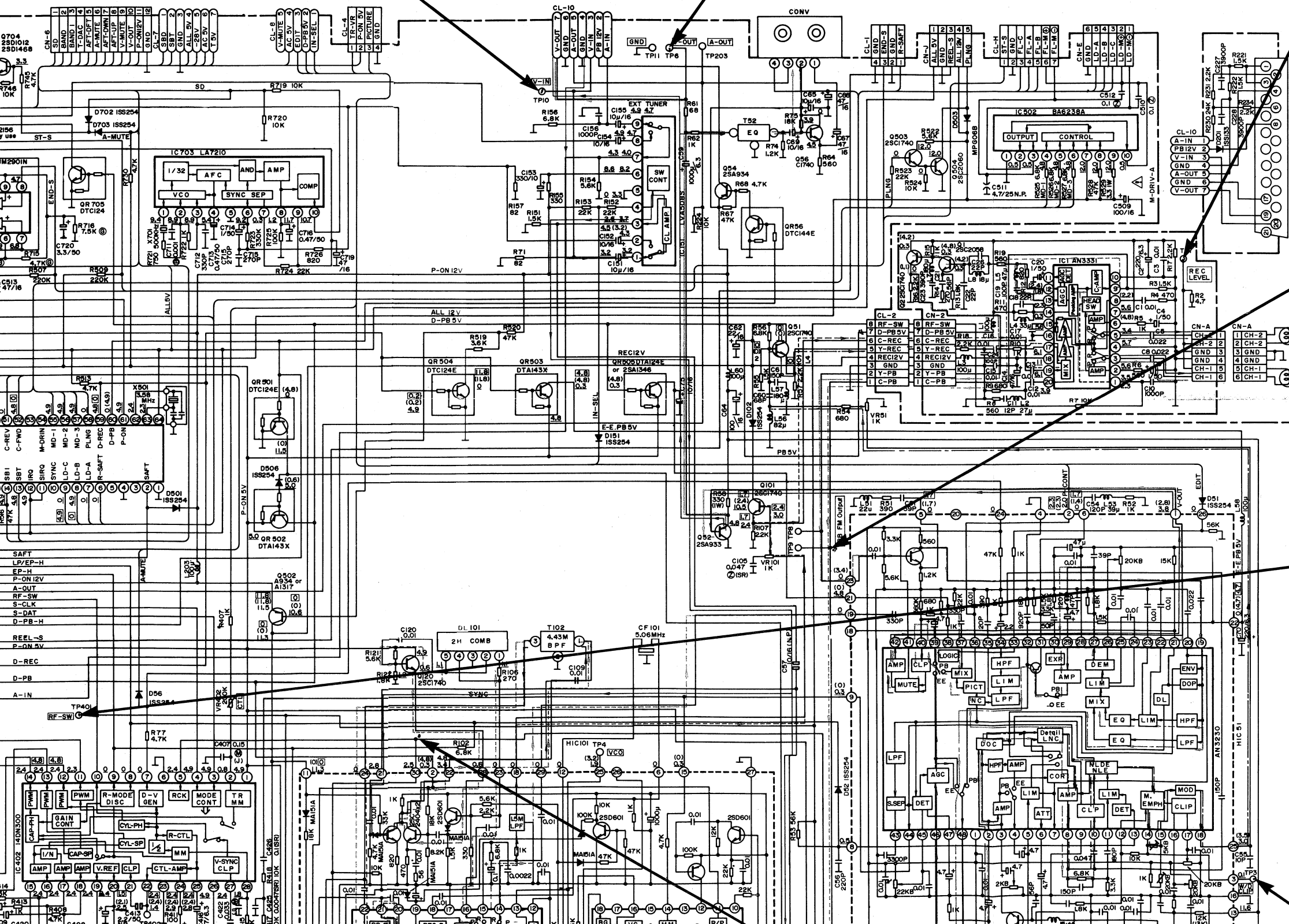
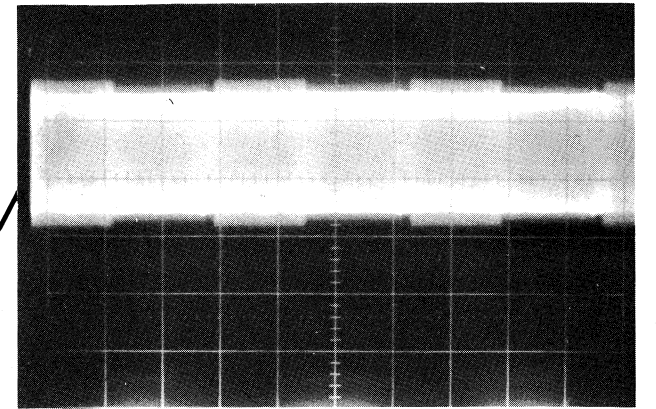
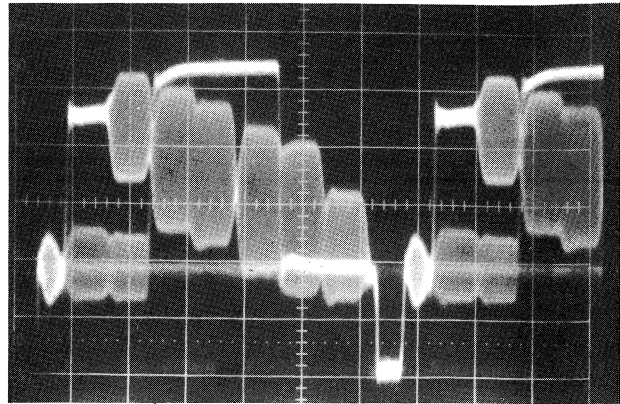
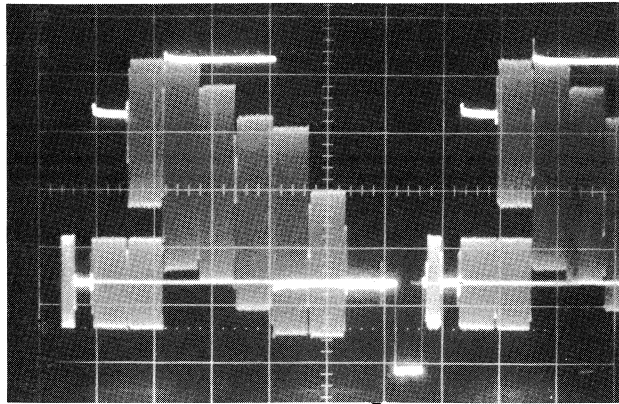
DRUM AND CAPSTAN TIMING CHARTS (RECORD MODE)

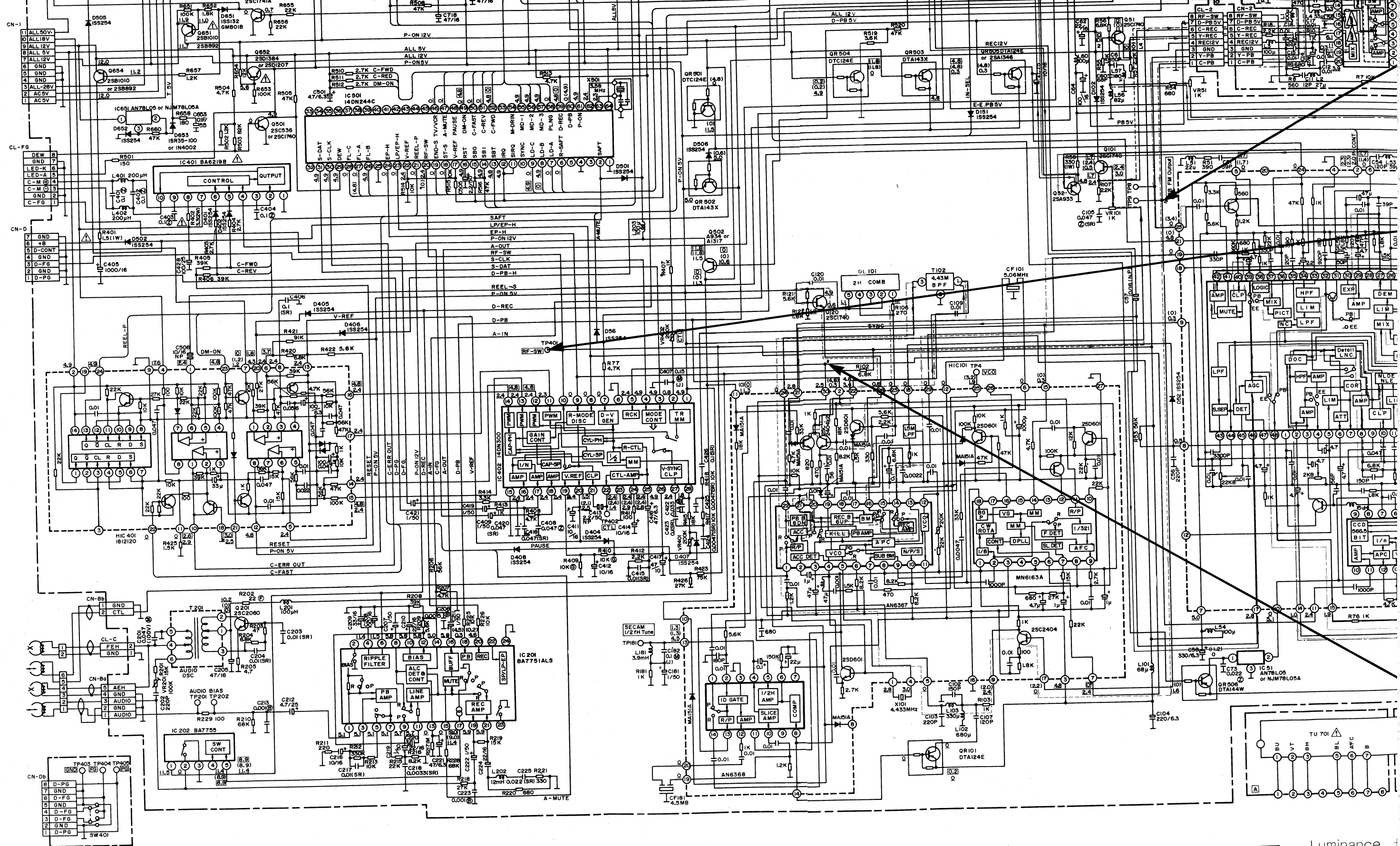


DRUM AND CAPSTAN TIMING CHARTS (PLAYBACK MODE)









NOTES:

1. ALL RESISTANCE VALUES ARE INDICATED IN OHM ($K = 10^3$, $M = 10^6$).
2. ALL CAPACITANCE VALUES ARE INDICATED IN μF ($P = 10^{-6} \mu F$).
3. VOLTAGES ARE MEASURED WITH $\pm 5\% \text{V}$ ($Z > 10K \text{ OHM}$) FROM POINT INDICATED TO CHASSIS GROUND AT NO SIGNAL CONDITION UNLESS OTHERWISE NOTED. (SEE VOLTAGE CHART.)
4. CAPACITOR TYPES ARE (PL) = POLYPROPYLENE, (SC) = SEMI-CONDUCTIVE, (M) = MYLAR, OTHERS ARE CERAMIC.


NOTE: All voltages are DC measured with a $\pm 5\% \text{V}$.
The DC voltage measured at E-E mode.

() : at record mode.)
() : at playback mode.)

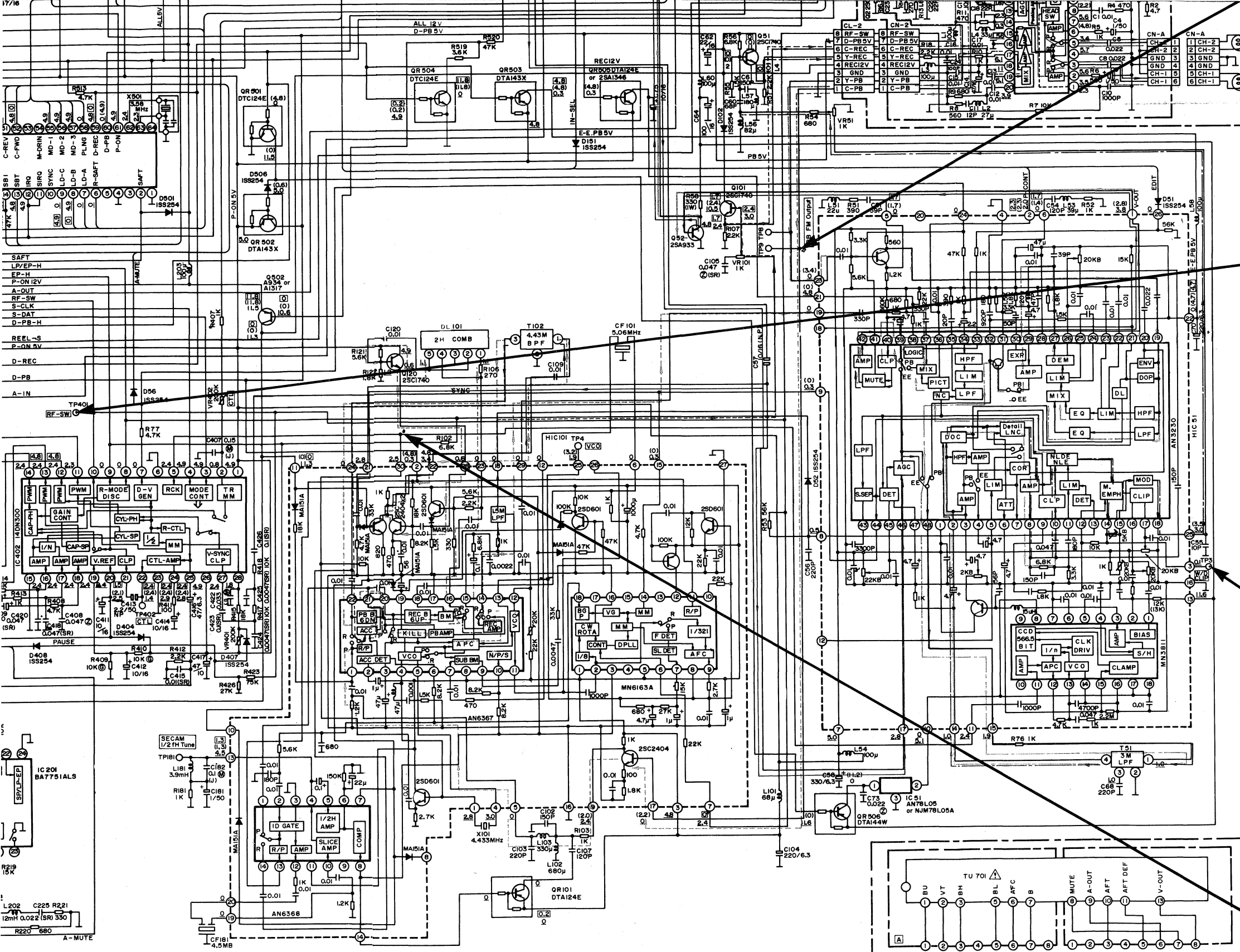
() : Fusing resistor


() : Safety material

WARNING:

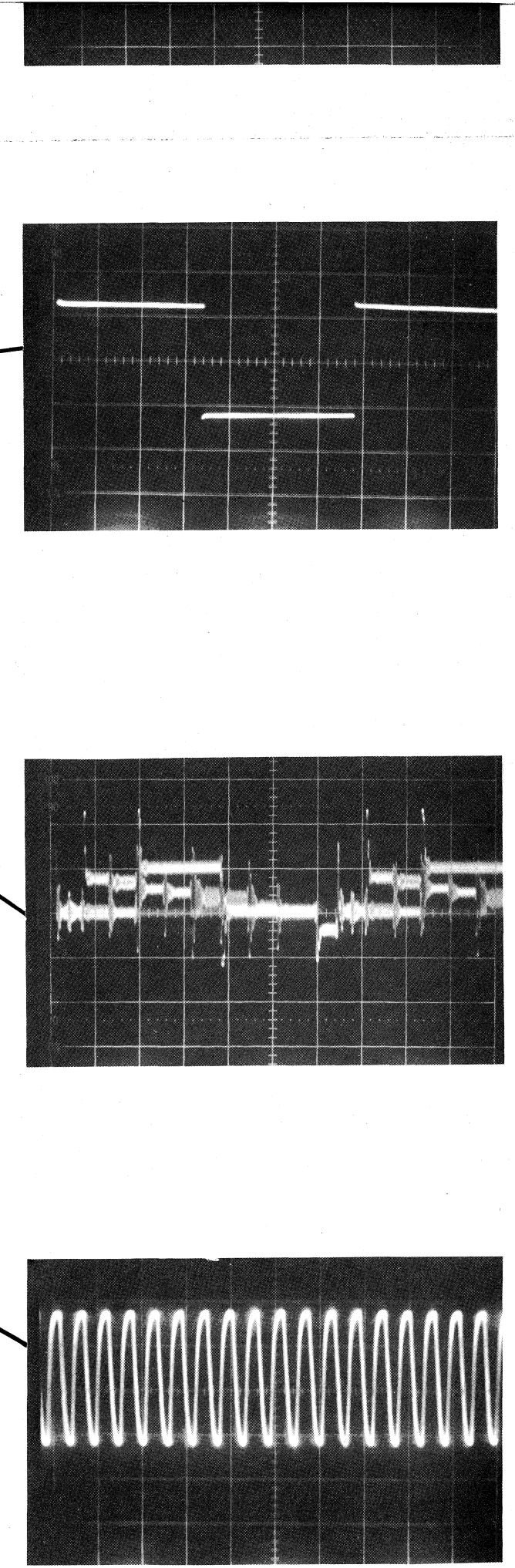
REPLACEMENT PARTS WHICH SPECIAL SAFETY CHARACTERISTICS ARE IDENTIFIED BY  SHOWING ON THIS SCHEMATIC DIAGRAM, REPLACE THESE CRITICAL COMPONENTS WITH RECOMMENDED REPLACEMENT PARTS. DON'T DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING. SERVICE PERSONNEL TO MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

M-11

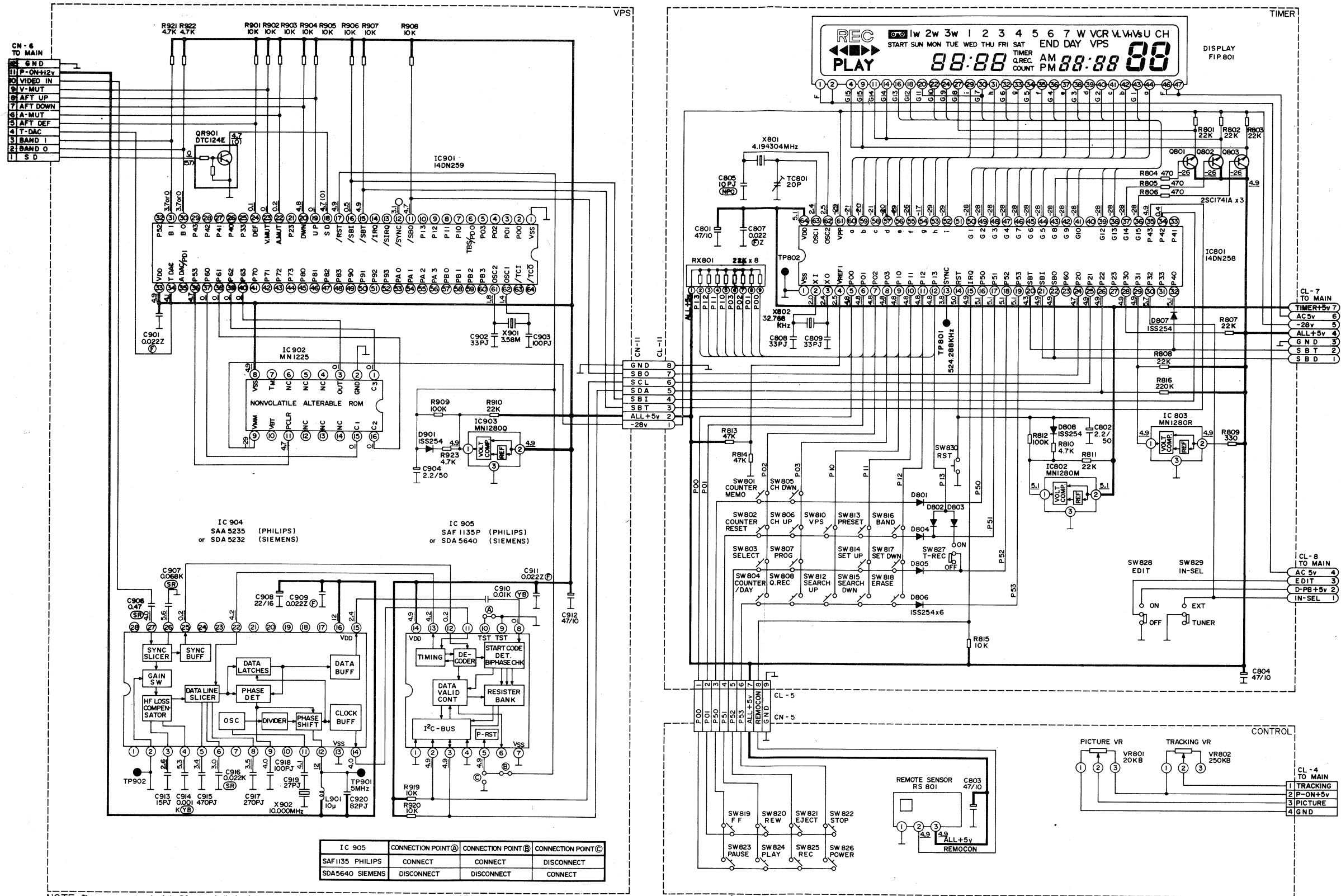


WARNING:
REPLACEMENT PARTS WHICH SPECIAL SAFETY CHARACTERISTICS ARE IDENTIFIED BY  SHOWING
ON THIS SCHEMATIC DIAGRAM, REPLACE THESE CRITICAL COMPONENTS WITH RECOMMENDED REPLACEMENT
PARTS. DON'T DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING. SERVICE PERSONNEL
TO MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE
ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

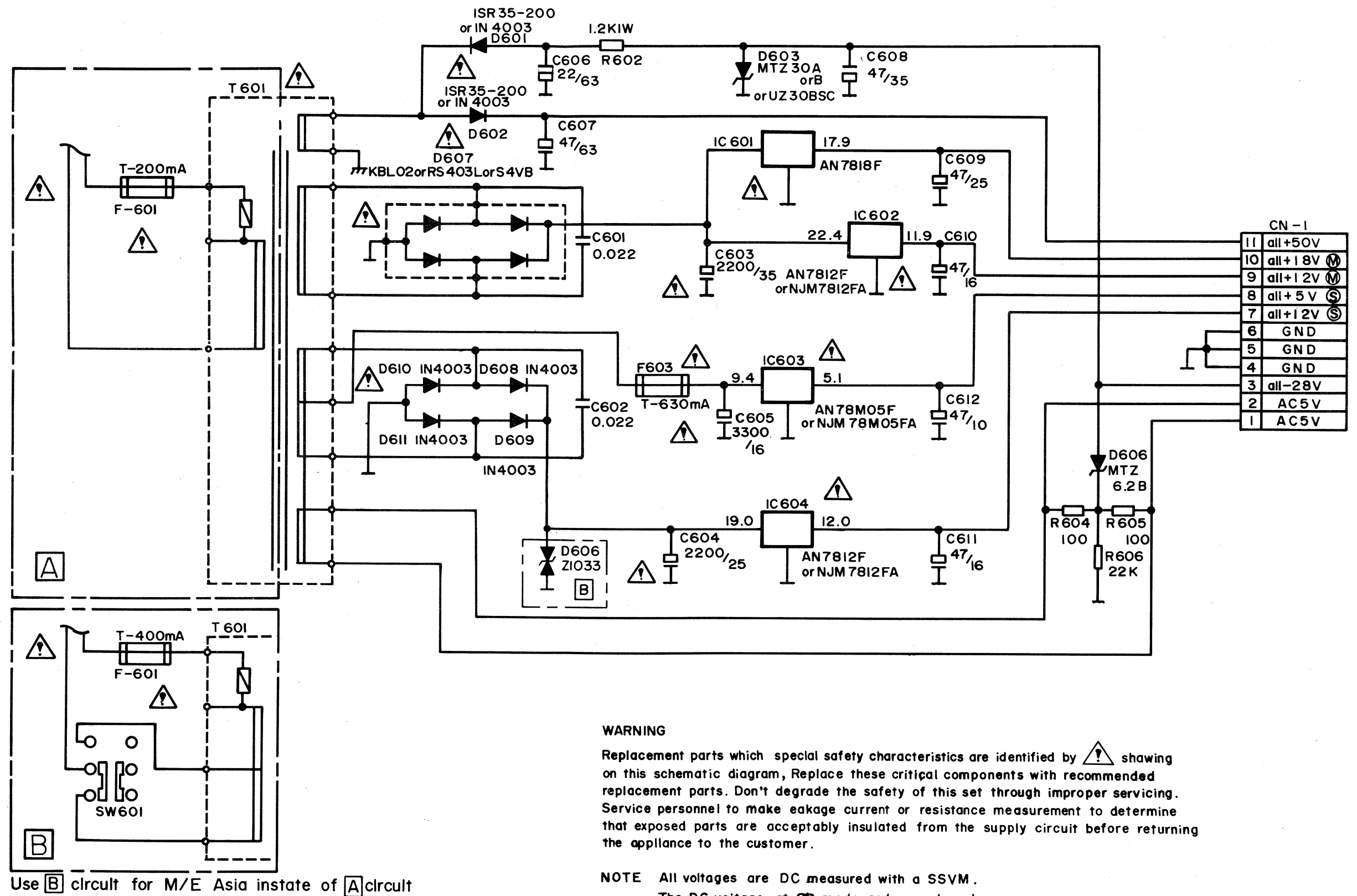
- Luminance + Chrominance(REC)
- Luminance(REC)
- Chrominance(REC)
- Luminance + Chrominance(PLAY)
- Luminance(PLAY)
- Chrominance(PLAY)



SCHEMATIC DIAGRAM (CONTROL/TIMER/VPS)



SCHEMATIC DIAGRAM (POWER SUPPLY)



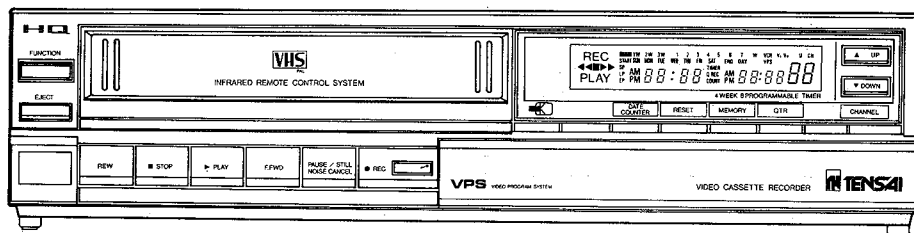


MODEL **TUR-1700**

HQ

Video cassette recorders bearing the "HQ" mark incorporate VHS high quality technology. Note that there is interchangeability with former VHS video cassette recorder.

Video Cassette Recorder



PARTS LIST

ELECTRICAL PARTS LIST

(PRV16)

Ref. No	Description	Parts No.
PCB Ass'y, Head AMP		1613906X
Capacitors		
C1	Ceramic 0.01 μ F /50V +80/ -20%	1220842
C2	Electrolytic 220 μ F /6.3V \pm 20%	526R227
C3	Ceramic 0.01 μ F /50V +80/ -20%	1220842
C4	Electrolytic 1 μ F /50V \pm 20%	526W105
C5	Ceramic 0.033 μ F /50V +80/ -20%	1220887
C6-7	Not used	
C8	Ceramic 0.033 μ F /50V +80/ -20%	1220887
C9	Electrolytic 1 μ F /50V \pm 20%	526W105
C10	Ceramic 1000pF /50V \pm 10% YB	12B3102
C11	Ceramic 12pF /50V \pm 5 % SL	1270120
C12-13	Ceramic 0.01 μ F /50V +80/ -20%	1220842
C14	Electrolytic 47 μ F /16V \pm 20%	526T476
C15-17	Ceramic 0.01 μ F /50V +80/ -20%	1220842
C18	Ceramic 22 pF /50V \pm 5 % SL	1270220
C19	Ceramic 100pF /50V \pm 5 % SL	1270101
C20	Electrolytic 1 μ F /50V \pm 20%	526W105
C21	Ceramic 56pF /50V \pm 5 % SL	1270560
C22	Not used	
C23	Ceramic 390pF /50V \pm 5 % SL	1270391
C24	Ceramic 82pF /50V \pm 5 % SL	1270820
C25-26	Ceramic 22pF /50V \pm 5 % SL	1270220
Coils		
L1	Microinductor 100 μ H	2162101
L2	Microinductor 27 μ H	2162270
L3	Microinductor 100 μ H	2162101
L4	Microinductor 33 μ H	2162330
L5	Microinductor 47 μ H	2162470
L6	Not used	
L7	Microinductor 180 μ H	2162181
L8	Microinductor 18 μ H	2162180
IC		
IC1	AN3331K (Linear) (Head AMP.)	14LN235
Resistors		
R1	Not used	
R2	Carbon 4.7 ohm 1/5W \pm 5 %	1324479
R3	Carbon 1.5k ohm 1/5W \pm 5 %	1324152
R4	Carbon 470 ohm 1/5W \pm 5 %	1324471
R5	Carbon 1k ohm 1/5W \pm 5 %	1324102
R6	Carbon 560 ohm 1/5W \pm 5 %	1324561
R7	Carbon 10k ohm 1/5W \pm 5 %	1324103
R8	Carbon 560 ohm 1/5W \pm 5 %	1324561
R9	Carbon 680 ohm 1/5W \pm 5 %	1324681
R10	Carbon 1k ohm 1/5W \pm 5 %	1324102
R11	Carbon 470 ohm 1/5W \pm 5 %	1324471
R12	Carbon 820 ohm 1/5W \pm 5 %	1324821
R13	Carbon 1.8k ohm 1/5W \pm 5 %	1324182
R14	Carbon 270 ohm 1/5W \pm 5 %	1324271
R15	Carbon 1k ohm 1/5W \pm 5 %	1324102
R16-18	Carbon 2.2k ohm 1/5W \pm 5 %	1324222
R19	Carbon 560 ohm 1/5W \pm 5 %	1324561
Transistors		
Q1	2SC2839EF or 2SC2058QR	C2839EF or C2058QR
Q2	2SC536SPEF or 2SC1740QR	C536SEF or C1740QR
Miscellaneous		
ON-A	Connector Base 6P	1770147
ON-2	Connector Base 8P	1770264
	Shield Plate, Top	6S50321
	Shield Plate, Bottom	6S50322

Ref.No	Description	Parts No.
PCB Ass'y, Video/Audio		1613961AX
Capacitors		
C51	Ceramic 39 pF /50V J SL	1270390
C54	Ceramic 120 pF /50V J SL	1270121
C55	Ceramic 10 pF /50V J SL	1270100
C56	Ceramic 220 pF /50V J SL	1270221
C57	Electrolytic 10 μ F /16V M (N.P.)	1260106
C58	Electrolytic 330 μ F /6.3V M	126A337
C59	Electrolytic 1000 μ F /6.3V M	126A108
C60	Ceramic 68 pF /50V J SL	1270680
C61	Ceramic 150 pF /50V J SL	1270151
C62	Electrolytic 22 μ F /16V M	126C226
C63	Not used	
C64	Electrolytic 100 μ F /16V M	126C107
C65	Electrolytic 10 μ F /16V M	126C106
C66-67	Electrolytic 47 μ F /16V M	126C476
C68	Ceramic 220 pF /50V J SL	1270221
C69	Electrolytic 10 μ F /16V M	126C106
C70	Electrolytic 220 μ F /6.3V M	126A227
C71	Not used	
C73	Ceramic 0.022 μ F /50V Z	12F3223
C75	Electrolytic 10 μ F /16V M	126C106
C101	Not used	
C102	Ceramic 150 pF /50V J SL	1270151
C103	Ceramic 220 pF /50V J SL	1270221
C104	Electrolytic 220 μ F /6.3V M	126A227
C105	Semi-conductive 0.047 μ F /16V Z	1220523
C107	Ceramic 120 pF /50V J SL	1270121
C109	Ceramic 0.01 μ F /50V Z	12F3103
C120	Ceramic 0.01 μ F /50V Z	12F3103
C151-152	Electrolytic 10 μ F /16V M	126C106
C153	Electrolytic 330 μ F /10V M	126B337
C154-155	Electrolytic 10 μ F /16V M	126C106
C156	Ceramic 0.001 μ F /50V K YB	12B3102
C181	Electrolytic 1 μ F /50V M	126F105
C182	Polyester Film 0.082 μ F /50V J	1254823
C201	Polyester Film 0.047 μ F /100V J SL	1255473
C202	Ceramic 220 pF /50V J SL	1270221
C203-204	Semi-conductive 0.01 μ F /25V K	12Y2103
C205	Electrolytic 47 μ F /16V M	126C476
C206	Ceramic 0.0015 μ F /50V K YB	12B3152
C207	Electrolytic 1 μ F /50V M	126F105
C208	Electrolytic 100 μ F /16V M	126C107
C209	Electrolytic 33 μ F /16V M	126C336
C210	Electrolytic 22 μ F /16V M	126C226
C211	Electrolytic 1 μ F /50V M	126F105
C212	Electrolytic 4.7 μ F /25V M	126D475
C213	Ceramic 0.001 μ F /50V K YB	12B3102
C214-215	Not used	
C216	Electrolytic 10 μ F /16V M	126C106
C217	Semi-conductive 0.01 μ F /25V K	12Y2103
C218	Semi-conductive 0.0033 μ F /25V K	12Y2332
C219	Electrolytic 1 μ F /50V M	126F105
C220	Electrolytic 22 μ F /16V M	126C226
C221	Electrolytic 47 μ F /6.3V M	126A476
C222	Electrolytic 1 μ F /50V M	126F105
C223	Ceramic 0.001 μ F /50V K YB	12B3102
C224	Electrolytic 22 μ F /16V M	126C226
C225	Semi-conductive 0.022 μ F /25V K	12Y2223
C226-229	Not used	
C401-404	Semi-conductive 0.1 μ F /25V Z	1220461 or 1220520
C405	Electrolytic 1000 μ F /16V M	626C108
C406	Semi-conductive 0.1 μ F /12V K	12Y1104
C407	Polyester Film 0.15 μ F /50V J SL	1254154
C408	Semi-conductive 0.047 μ F /16V Z	1220523
C409	Electrolytic 1 μ F /50V M	126F105
C411-412	Electrolytic 10 μ F /16V M	126C106
C413	Electrolytic 2.2 μ F /50V M (N.P.)	126X225
C414	Electrolytic 10 μ F /16V M	126C106
C415	Semi-conductive 0.01 μ F /25V K	12Y2103
C416	Electrolytic 47 μ F /6.3V M	126A476
C417	Electrolytic 47 μ F /10V M	126B476
C418	Semi-conductive 0.047 μ F /25V K	12Y2473
C419	Electrolytic 1 μ F /50V M	126F105
C420	Semi-conductive 0.047 μ F /25V K	12Y2473
C421	Electrolytic 1 μ F /50V M	126F105
C422	Polyester Film 0.033 μ F /50V J SL	1254333
C423	Semi-conductive 0.1 μ F /12V K	12Y1104
C424-425	Semi-conductive 0.0047 μ F /25V K	12Y2472
C426	Semi-conductive 0.1 μ F /12V K	12Y1104
C428	Electrolytic 100 μ F /25V M	126D107

Ref.No	Description	Parts No.
C501	Electrolytic 47 μ F /6.3V M	126A476
C505	Electrolytic 2.2 μ F /50V M	126F225
C506	Electrolytic 10 μ F /16V M (N.P.)	126U106
C509	Electrolytic 100 μ F /16V M	126C107
C510	Semi-conductive 0.1 μ F /25V Z	1220461 or 1220520
C511	Electrolytic 4.7 μ F /25V M (N.P.)	126V475
C512	Semi-conductive 0.1 μ F /25V Z	1220461 or 1220520
C513	Electrolytic 47 μ F /16V M	126C476
C653	Electrolytic 0.1 F /5.5V M	1220784 or 1220855
C702	Electrolytic 0.1 μ F /50V M	126F104
C703	Semi-conductive 0.033 μ F /50V K	1220786
C704	Semi-conductive 0.015 μ F /50V J	1254153
C705	Semi-conductive 0.033 μ F /50V K	1220786
C706	Semi-conductive 0.015 μ F /50V J	1254153
C707	Electrolytic 47 μ F /35V M	126E476
C708	Electrolytic 4.7 μ F /25V M	126D475
C709	Ceramic 0.001 μ F /50V K YB	12B3102
C710	Electrolytic 1000 μ F /6.3V M	126A108
C711	Ceramic 0.001 μ F /50V K YB	12B3102
C712	Ceramic 330 pF /50V J SL	1270331
C713	Electrolytic 0.47 μ F /50V M	126F474
C714	Electrolytic 1 μ F /50V M	126F105
C715	Ceramic 270 pF /50V J SL	1270271
C716	Electrolytic 0.47 μ F /50V M	126F474
C717	Electrolytic 100 μ F /16V M	126C107
C718-719	Electrolytic 47 μ F /16V M	126C476
C720	Electrolytic 3.3 μ F /50V M	126F335
C721	Not used	
C722	Electrolytic 0.1 μ F /50V M	126F104
C723	Electrolytic 0.47 μ F /50V M	126F474
Coils		
L51	Microinductor 22 μ H	2162220
L53	Microinductor 39 μ H	2162390
L54	Microinductor 100 μ H	2162101
L56	Microinductor 82 μ H	2162820
L57	Microinductor 180 μ H	2162181
L58	Microinductor 100 μ H	2162101
L60	Microinductor 100 μ H	2162101
L101	Microinductor 68 μ H	2162680
L102	Microinductor 680 μ H	117M491 or 117D491
L103	Microinductor 330 μ H	2162331
L106	Not used	
L181	Microinductor 3.9 nH	113M575
L201	Microinductor 100 μ H	2162101
L202	Microinductor 12 nH	117M502 or 117D472
L203	Microinductor 100 μ H	2162101
L401-402	Choke 200 μ H	117B441
T52	BQ Coil	1810585 or 1810710
T201	Audio Bias OSC	113M686 or 1130686
Diodes		
D51-52	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D55	Not used	
D56	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D102	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D151	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D401-402	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D404-408	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D501-502	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D503	MFG06B	MFG06B

Ref. No	Description	Parts No.
D505-506	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D651	1SS132 or GMB01BT	1SS132 or GMB01BT
D652	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
D653	MFC06B	MFC06B
D702-703	US1040M or 1SS254 or GMB01BT	US1040M or 1SS254 or GMB01BT
Filters		
T51	LFF 3MHz	1810805 or 1810994
T101	LFF 1.5MHz	113M621 or 113D621
T102	BFF 4.43MHz	1810770 or 1810804
CF101	Ceramic 5.06MHz	1810497
CF181	Ceramic 4.5 MHz	1810359
DL101	Comb Filter	1812112 or 1812215
ICs		
IC51	LM78L05A or AN78L05 (Linear) (3terminal Voltage Regulator)	J78L05A or AN78L05
IC151	LVA508S (Linear) (Input Selector)	14L0187
IC201	BA7751LS or BA7751AL (Linear) (Audio)	14L0200
IC202	BA7755 (Linear) (R/P Switch)	14LF236
IC401	BA6219B (Linear) (Capstan Drive)	14LF232
IC402	MN6748FVAA (Mos /Other) (Servo)	14DN300
IC501	MN15846 IFVU-6 (Mos /Micro Processor) (Sys-Con)	14DN244C
IC502	BA6238A or TA7288P (Linear) (Loading Motor Drive)	14LF168 or 14LW198
IC651	LM78L05A or AN78L05 (Linear) (3terminal Voltage Regulator)	AN78L05 or J78L05A
IC701	LA7913 (Linear) (Band Selector & AMP)	14LQ237
IC702	AN6912 or LA6339 (Linear) or BA10339 or NM2901N (Linear) (Comparator)	AN6912 or LA6339 or BA10339 or NM2901N
IC703	LA7210 (Linear) (Sync Sepa)	14LQ115
IC704	L5631 (Linear) (Voltage Regulator)	L5631
III51	Hybrid Y (Other) (Luminance)	1812119
III101	Hybrid C (Other) (Color)	1812117
III401	Hybrid Servo (Other) (Servo)	1812120

Ref. No	Description	Parts No.
Resistors		
R51	Carbon 390 ohm 1/5W J	1324391
R52	Carbon 1k ohm 1/5W J	1324102
R53	Carbon 56k ohm 1/5W J	1324563
R54	Carbon 680 ohm 1/5W J	1324681
R55	Carbon 1.5k ohm 1/5W J	1324152
R56	Carbon 6.8k ohm 1/5W J	1324682
R57	Carbon 2.2k ohm 1/5W J	1324222
R58	Oxide Film 330 ohm 1W J	1330419 or 1330363
R61	Carbon 68 ohm 1/5W J	1324680
R62	Carbon 1k ohm 1/5W J	1324102
R63	Carbon 18 ohm 1/5W J	1324180
R64	Carbon 560 ohm 1/5W J	1324561
R65-66	Not used	
R67	Carbon 47k ohm 1/5W J	1324473
R68	Carbon 4.7k ohm 1/5W J	1324472
R70	Not used	
R71	Carbon 82 ohm 1/5W J	1324820
R72-73	Not used	
R74	Carbon 1.2k ohm 1/5W J	1324122
R75	Carbon 18k ohm 1/5W J	1324183
R76	Carbon 1k ohm 1/5W J	1324102
R77	Carbon 4.7k ohm 1/5W J	1324472
R102	Carbon 6.8k ohm 1/5W J	1324682
R103	Carbon 1k ohm 1/5W J	1324102
R105	Not used	
R106	Carbon 270 ohm 1/5W J	1324271
R107	Carbon 2.2k ohm 1/5W J	1324222
R108	Not used	
R121	Carbon 5.6k ohm 1/5W J	1324562
R122	Carbon 1.8k ohm 1/5W J	1324182
R151	Carbon 1.5k ohm 1/5W J	1324152
R152-153	Carbon 22k ohm 1/5W J	1324223
R154	Carbon 5.6k ohm 1/5W J	1324562
R155	Carbon 330 ohm 1/5W J	1324331
R156	Carbon 6.8k ohm 1/5W J	1324682
R157	Carbon 82 ohm 1/5W J	1324820
R181	Carbon 1k ohm 1/5W J	1324102
R201	Carbon 15k ohm 1/5W J	1324153
R202	Fuse 22 ohm 1/4W J	5361220
R203	Carbon 47 ohm 1/5W J	1324470
R204	Carbon 6.8k ohm 1/5W J	1324682
R205	Carbon 4.7 ohm 1/5W J	1324479
R206	Carbon 56k ohm 1/5W J	1324563
R207	Carbon 4.7k ohm 1/5W J	1324472
R208	Carbon 39k ohm 1/5W J	1324393
R209	Carbon 5.6k ohm 1/5W J	1324562
R210	Carbon 68k ohm 1/5W J	1324683
R211	Carbon 220 ohm 1/5W J	1324221
R212	Carbon 330k ohm 1/5W J	1324334
R213	Carbon 10k ohm 1/5W J	1324103
R214	Not used	
R215	Carbon 22k ohm 1/5W J	1324223
R216	Carbon 8.2k ohm 1/5W J	1324822
R217	Carbon 1M ohm 1/5W J	1324105
R218	Carbon 27k ohm 1/5W J	1324273
R219	Carbon 15k ohm 1/5W J	1324153
R220	Carbon 680 ohm 1/5W J	1324681
R221	Carbon 330 ohm 1/5W J	1324331
R223	Not used	
R224-226	Carbon 10k ohm 1/5W J	1324103
R228	Carbon 68k ohm 1/5W J	1324683
R229	Carbon 100 ohm 1/5W J	1324101
R401	Oxide Film 1.5 ohm 1W J	1330391 or 1330317
R402	Oxide Film 3.3 ohm 2W J	1330460 or 1330318
R403-404	Carbon 2.7k ohm 1/5W J	1324272
R405-406	Carbon 39k ohm 1/5W J	1324393
R407	Carbon 1k ohm 1/5W J	1324102
R408	Carbon 4.7k ohm 1/5W J	1324472
R409-410	Carbon 10k ohm 1/5W J	1354103
R411	Carbon 100 ohm 1/5W J	1324101
R412	Carbon 2.2k ohm 1/5W J	1324222
R413	Carbon 1k ohm 1/5W J	1324102
R414	Carbon 3.3k ohm 1/5W J	1324332
R415	Carbon 18k ohm 1/5W J	1324183
R417-418	Carbon 10k ohm 1/5W J	1324103
R419	Not used	
R420	Carbon 6.8k ohm 1/5W J	1324682
R421	Carbon 91k ohm 1/5W J	1324913
R422	Carbon 6.8k ohm 1/5W J	1324682

Ref. No	Description		Parts No.
R423	Carbon	75k ohm 1/5W J	1324753
R425	Carbon	1.5k ohm 1/5W J	1324152
R426	Carbon	27k ohm 1/4W J	1330738
R501	Carbon	150 ohm 1/5W J	1324151
R502	Carbon	1.2k ohm 1/5W J	1324122
R503	Carbon	82k ohm 1/5W J	1324823
R504	Carbon	4.7k ohm 1/5W J	1324472
R505-506	Carbon	47k ohm 1/5W J	1324473
R507	Carbon	220k ohm 1/5W J	1324224
R508	Carbon	47k ohm 1/5W J	1324473
R509	Carbon	220k ohm 1/5W J	1324224
R510-512	Carbon	2.7k ohm 1/5W J	1324272
R513	Carbon	4.7k ohm 1/5W J	1324472
R514-515	Carbon	10k ohm 1/5W J	1324103
R516	Carbon	47k ohm 1/5W J	1324473
R519	Carbon	3.6k ohm 1/5W J	1324362
R520	Carbon	47k ohm 1/5W J	1324473
R522	Carbon	5.6k ohm 1/5W J	1324562
R523	Carbon	22k ohm 1/5W J	1324223
R524	Carbon	10k ohm 1/5W J	1324103
R525-527	Carbon	6.8k ohm 1/5W J	1324682
R528	Carbon	47k ohm 1/5W J	1324473
R529	Oxide Film	3.3 ohm 1W J	1330395 or 1330320
R651	Carbon	100k ohm 1/5W J	1324104
R652	Carbon	1.8k ohm 1/5W J	1324182
R653	Carbon	100k ohm 1/5W J	1324104
R654	Carbon	1.2k ohm 1/5W J	1324122
R655-656	Carbon	22k ohm 1/5W J	1324223
R657	Carbon	1.2k ohm 1/5W J	1324122
R658	Carbon	180 ohm 1/5W J	1324181
R660	Carbon	4.7k ohm 1/5W J	1324472
R701	Carbon	10k ohm 1/5W J	1324103
R702	Carbon	33k ohm 1/5W J	1324333
R703	Carbon	470k ohm 1/5W J	1324474
R704-706	Carbon	220k ohm 1/5W J	1324224
R707	Carbon	22k ohm 1/5W J	1324223
R708-709	Carbon	47k ohm 1/5W J	1324473
R710	Carbon	1M ohm 1/5W J	1324105
R711	Carbon	3.9k ohm 1/5W J	1324392
R712	Carbon	3.3k ohm 1/5W J	1324332
R713-714	Carbon	12k ohm 1/5W G	1354123
R715	Carbon	4.7k ohm 1/5W G	1354472
R716	Carbon	7.5k ohm 1/5W G	1354752
R717	Carbon	33k ohm 1/5W J	1324333
R718-720	Carbon	10k ohm 1/5W J	1324103
R721	Carbon	750 ohm 1/5W J	1324751
R722	Carbon	1k ohm 1/5W J	1324102
R723	Carbon	330k ohm 1/5W J	1324334
R724	Carbon	22k ohm 1/5W J	1324223
R725	Carbon	100k ohm 1/5W J	1324104
R726	Carbon	820 ohm 1/5W J	1324821
R727	Carbon	47k ohm 1/5W J	1324473
R730	Carbon	4.7k ohm 1/5W J	1324472
R731	Carbon	1.5k ohm 1/5W J	1324152
R734	Carbon	1.5k ohm 1/2W J	1322152
R745	Carbon	4.7k ohm 1/5W J	1324472
R746	Carbon	10k ohm 1/5W J	1324103
Semi-Fixed Resistors			
VR51	1k ohm B		138N777 or 138J777
VR101	1k ohm B		138N777 or 138J777
VR201	100k ohm B		138N785 or 138J785
VR401	200k ohm B (Metal)		1380832
VR402	200k ohm B		138N786 or 138J786
Transistors			
Q51	2SC536SPBF or 2SC1740QR		C536SEF or C1740QR
Q52	2SA608SEF or 2SA934QR		A608SEF or A934QR
Q53	Not used		
Q54	2SA1317ST or 2SA934QR		A1317ST or A934QR
Q56	2SC536SPBF or 2SC1740QR		C536SEF or C1740QR

Ref. No	Description		Parts No.
Q101	2SC536SPBF or 2SC1740QR		C536SEF or C1740QR
Q120	2SC536SPBF or 2SC1740QR		C536SEF or C1740QR
Q201	2SD400F or 2SC2060Q		D400F or C2060Q
Q501	2SC536SPBF or 2SC1740QR		C536SEF or C1740QR
Q502	2SA1317ST or 2SA934QR		A1317ST or A934QR
Q503	2SC536SPBF or 2SC1740QR		C536SEF or C1740QR
Q504	2SD400F or 2SC2060Q		D400F or C2060Q
Q651	2SB892ST or 2SB1010QR		B892ST or B1010QR
Q652	2SD1207ST or 2SD1384QR		D1207ST or D1384QR
Q653	2SC3393SPST or 2SC1741AQR		C3393SST or C1741AQR
Q654	2SB892ST or 2SB1010QR		B892ST or B1010QR
Q701	2SA1016KPG or 2SA1038RS		A1016KPG or A1038RS
Q702	2SK128TAPQ (PEI)		K128PQ
Q704	2SD1012FG or 2SD1468SRS		D1012FG or D1468SRS
QR56	DTC144ES		C144ES
QR101	DTR 2SA1346 or DTA124ES		A1346 or A124ES
QR501	DTR 2SC3400 or DTC124ES		C3400 or C124ES
QR502-503	DTA143XS		A143XS
QR504	DTR 2SC3400 or DTC124ES		C3400 or C124ES
QR505	DTR 2SA1346 or DTA124ES		A1346 or A124ES
QR506	DTA144WS		A144WS
QR702	DTR 2SA1346 or DTA124ES		A1346 or A124ES
QR703	DTR 2SC3400 or DTC124ES		C3400 or C124ES
QR705	DTR 2SC3400 or DTC124ES		C3400 or C124ES
Miscellaneous			
CN-Ba	Connector Base 5P (TOP)		1740767
CN-Bb	Connector Base 2P (TOP)		1740764
CN-D	Connector Base 7P (TOP)		1740769
CN-E	Connector Base 6P (TOP)		1740768
CN-J	Connector Base 5P (TOP)		1740767
CN-10	Connector Base 7P (Straight)		1730881
X101	X TAL 4.43MHz		1811205
X501	Ceramic Resonator 3.58MHz		1811211 or 1812206
X701	Ceramic Resonator 500kHz		1811103 or 1810414
	Heatsink		6550318
TU701	Tuner IF		1812156
CONV-1	RF Conv		1812155

Ref. No	Description	Parts No.
PCB Ass'y, Timer		1613961BX
Capacitors		
C801	Electrolytic 47 μ F /10V M	526S476
C802	Electrolytic 2.2 μ F /50V M	526W225
C803-804	Electrolytic 47 μ F /10V M	526S476
C805	Ceramic 10 pF /50V J CH	12CH100
C807	Ceramic 0.022 pF /50V Z	12F3223
C808-809	Ceramic 33 pF /50V J SL	1270330
C811	Ceramic 330 pF /50V J SL	1270331
Diodes		
D801-808	US1040M or 1SS254 or 1SS133	US1040M or 1SS254 or 1SS133T
D811	Not used	
ICs		
IC801	MN15881FW (Mcs /Micro Processor) (Timer)	14DN258
IC802	MN1280M (Mcs /Other) (Reset)	14DN215
IC803	MN1280R (Mcs /Other) (Reset)	14DN160
Resistors		
R801-803	Carbon 22k ohm 1/5W J	1324223
R804-806	Carbon 470 ohm 1/5W J	1324471
R807-808	Carbon 22k ohm 1/5W J	1324223
R809	Carbon 330 ohm 1/5W J	1324331
R810	Carbon 4.7k ohm 1/5W J	1324472
R811	Carbon 22k ohm 1/5W J	1324223
R812	Carbon 100k ohm 1/5W J	1324104
R813-814	Carbon 47k ohm 1/5W J	1324473
R815	Carbon 10k ohm 1/5W J	1324103
R816	Carbon 220k ohm 1/5W J	1324224
RX801	RES Network 22k ohm \times 8	1370066 or 137N066 or 137P066
Transistor		
Q801-803	2SC1741A Q or R	C1741AQ or C1741AR
Switches		
SW801-808	Push SW	5622015 or 5622017 or 1622908
SW810	Push SW	5622015 or 5622017 or 1622908
SW812-818	Push SW	5622015 or 5622017 or 1622908
SW827-829	Slide SW 1C-2P	5622015 or 5622017 or 1622908
SW830	Push SW	5622015 or 5622017 or 1622908
Miscellaneous		
TC801	Trimmer 20pF	1280122 or 1280154 or 1280140
X801	X' TAL 4.19430MHz	1811191
X802	X' TAL 32.768kHz	1811100
FIP801	IS-MT-302K	1812095
	FIP Holder	6N50142
PCB Ass'y Control		1613961CX
Switches		
SW819-826	Push SW	5622015 or 5622017 or 1622908

Ref. No	Description	Parts No.
PCB Ass'y Switch		1613905FX
SW401	Switch (Slide) Connector Base 8P (Side)	1621691 or 1621692 or 1621693 or 1740781
PCB Ass'y Scart Jack		1613961DX
Capacitors		
C227-228	Ceramic 0.0039 μ F /50V K YB	12B3392
Diode		
D201	1SS133 or 1SS254 or US1040M	1SS133 or 1SS254 or US1040M
Resistors		
R221-222	Carbon 1.5k ohm 1/5W J	1324152
R230	Carbon 12k ohm 1/5W J	1324123
R231	Carbon 2.2k ohm 1/5W J	1324222
R234	Carbon 2.2k ohm 1/5W J	1324222
Miscellaneous		
VR801	Potentiometer 20k ohm (B) (Traking)	539N703
VR802	Potentiometer 250k ohm (B) (Picture)	539N661
RS801	Remote Sensor	1812012
QN-5	Connector Base 9P (Side) Scart Jack 21P	1770254 1770177 or 1770176

Ref. No	Description	Parts No.
PCB Ass'y, Power Supply		1613903X
Capacitors		
C601-602	Ceramic 0.022 μ F /50V +80/-20%	12F3223
C603	Electrolytic 2200 μ F /35V \pm 20%	626E228
C604	Electrolytic 2200 μ F /25V \pm 20%	626D228
C605	Electrolytic 3300 μ F /16V \pm 20%	626C338
C606	Electrolytic 22 μ F /63V \pm 20%	126G226
C607	Electrolytic 47 μ F /63V \pm 20%	126G476
C608	Electrolytic 47 μ F /35V \pm 20%	126E476
C609	Electrolytic 47 μ F /25V \pm 20%	126D476
C610-611	Electrolytic 47 μ F /16V \pm 20%	126C476
C612	Electrolytic 220 μ F /6.3V \pm 20%	626A227
Diodes		
D601-602	1N4003 or GP10-4003 or 1SR35-200A	1N4003F2 or 35-200A or MPL5209
D603	M1Z30A or M1Z30B or UZ-30BSC	M1Z30A or M1Z30B or UZ-30BSC
D604-605	Not used	M1Z5.1B
D606	M1Z5.1B	KBL02L or RS403L or S4VB20
D607	KBL02L or RS403L or S4VB20	1N4003F2 or MPL5209
D608-611	1N4003 or GP10-4003	
ICs		
IC601	AN7818F (Linear) (Voltage Regulator)	AN7818F
IC602	AN7812F or NJM7812FA (Linear) (Voltage Regulator)	AN7812F or 14L0251
IC603	AN78M05F or NJM78M05FA (Linear) (Voltage Regulator)	AN78M05F or 14L0238
IC604	AN7812F or NJM7812FA (Linear) (Voltage Regulator)	AN7812F or 14L0251
Resistors		
R601	Not used	
R602	Metal Oxide 1.2k ohm 1W \pm 5 %	534A122
R603	Not used	
R604-605	Carbon 100 ohm 1/5W \pm 5 %	1324101
R606	Carbon 22k ohm 1/5W \pm 5 %	1324223
Miscellaneous		
T601	Power Trans	115N509 or 1150509
F601	Fuse 200mA	1790474
F602	Not used	
F603	Fuse 630mA	1790479
CN-1	Connector Base 11P (SIDE)	1770256
CN-12	Connector	1730688
L601	Line Filter	171N082
	L.F. Cover	GN50150
	Fuse Holder	1790424
	Trans Cover	GN50150
Others		
	AC Cord	5750011
	Cord stopper	1790173
	RCA Plug Cord	1750926

Ref. No	Description	Parts No.
PCB Ass'y, VPS		1613909X
Capacitors		
C901	Ceramic 0.022 μ F /50V +80/ -20%	12F3223
C902	Ceramic 33 pF /50V \pm 5 % SL	1270330
C903	Ceramic 100 pF /50V \pm 5 % SL	1270101
C904	Electrolytic 2.2 μ F /50V \pm 20%	126F225
C905	Not used	
C906	Semi-Conductive 0.47 μ F /12V \pm 20%	1220787
C907	Semi-Conductive 0.068 μ F /25V \pm 10%	12Y2683
C908	Electrolytic 22 μ F /16V \pm 20%	126C226
C909	Ceramic 0.022 μ F /50V +80/ -20%	12F3223
C910	Ceramic 0.01 μ F /50V \pm 10% YB	12B3103
C911	Ceramic 0.022 μ F /50V +80/ -20%	12F3223
C912	Electrolytic 47 μ F /10V \pm 20%	126B476
C913	Ceramic 15 pF /50V \pm 5 % SL	1270150
C914	Ceramic 0.001 μ F /50V \pm 10% YB	12B3102
C915	Ceramic 470 pF /50V \pm 5 % SL	1270471
C916	Semi-Conductive 0.022 μ F /25V \pm 10%	12Y2223
C917	Ceramic 270 pF /50V \pm 5 % SL	1270271
C918	Ceramic 100 pF /50V \pm 5 % SL	1270101
C919	Ceramic 27 pF /50V \pm 5 % SL	1270270
C920	Ceramic 82 pF /50V \pm 5 % SL	1270820
Coil		
L901	10 μ Hi	117M517
Diode		
D901	ISS133 or US1040M ISS254	US1040M or ISS133 ISS254
IC		
IC901	MN1512FV (Mbs /Micro Processor) (Tuner)	14DN259
IC902	MN1225 (Linear) (Memory)	14DN269
IC903	MN1280Q (Mbs /Other) (Mbs /Other)	14DN185
IC904	SA5235 or SDA5232 (Other) (VPS DATE Slicer)	14DC801 or 14DC271
IC905	SAF1135P or SDA5640 (Other) (DATE Line Decoder)	14DC802 or 14DC270
Resistors		
R901-908	Carbon 10k ohm 1/5W \pm 5 %	1324103
R909	Carbon 100k ohm 1/5W \pm 5 %	1324104
R910	Carbon 22k ohm 1/5W \pm 5 %	1324223
R911-918	Not used	
R919-920	Carbon 10k ohm 1/5W \pm 5 %	1324103
R921-923	Carbon 4.7k ohm 1/5W \pm 5 %	1324472
Transistors		
QR901	DTC124ES	DTC124ES
Miscellaneous		
QN-6	Connector Base 12P	1770294
QN-11	Connector Base 8P	1770293
X901	Ceramic Resonator 3.58MHz	1810728 or 1810727
X902	X' tal 10.000MHz	1811210

MECHANICAL PARTS LIST (DECK)

Ref. No.	Description	Parts No.
CYLINDER		
1	Cylinder Ass'y (Consists of 2-13, 19, 20, 24)	8000-01-315
2	Drum, upper with video head	8000-01-13
3	Mount Assy, Cylinder (Consists of 4-8, 24)	8000-01-302
4	Drum, Lower Ass'y	8000-01-303
5	Mount, Cylinder	8000-01-22
6	PCB Ass'y, video Out	8000-01-304
7	Screw, Sens, M3 x 10	9109-00-00
8	Screw, Sens, M2.6 x 6	9098-00-00
24	Screw, Sens, M3 x 12	9110-00-00
9	Motor, TM-81A	6004-03-22
10	Screw, Camera, M2 x 4.5	9560-00-00
11	Screw, Sens, M2.6 x 6	9098-00-00
12	PCB for Upper Drum	8000-01-14
13	Screw, Sens, M3 x 8	9108-00-00
19	Screw, Sens, M2 x 5	9078-00-00
20	Rivet, Drum Motor Bracket	8000-01-501
14	Screw, Sens, M3 x 10	9109-00-00
15	Bracket, Drum Ground	8000-01-48
16	Ground, Drum	8000-01-49
17	Screw, Tans, M3 x 10	9109-00-00
18	Screw, CLP, M2.6 x 3	9965-00-00
21	Supporter PCB, Motor	8000-01-37
22-23	Not used	
25-30	Not used	
CHASSIS		
31	Rivet, chassis	8000-02-507
32-33	Not used	
34	Open Angle Ass'y	8000-02-301
35	Screw, C-Tight, M2.6 x 5	9192-00-00
36	Rivet, Back Tension Change Plate	8000-02-502
37	Arm (B), Back Tension Change	8000-13-32
38	Collar	8000-08-12
39	Screw, Camera S-Tight, M2.6 x 3.5	9840-00-00
40	Actuator (B), Back Tension	8000-13-31
41	Collar	8000-08-12
42	Screw, C-Tight, M2.6 x 5	9192-00-00
43	Return Arm, Right Brake	8000-02-21
44	Collar	8000-08-12
45	Screw, C-Tight, M2.6 x 5	9192-00-00
46	Bracket, Mecha	8000-22-09
47	Screw, C-Tight, M3 x 5	9202-00-00
48-50	Not used	
LOADING BASE		
51	Rivet, loading Base	8000-03-501
52	Block (L), Loading	8000-03-31
53	Block (R), Loading	8000-03-09
54	Post, Roller	8000-03-34
55	Boss, Loading	8000-03-12
56	Screw, Set with Hexagon Hole, M 2 x 3	9952-00-00
57	Screw, Camera, M2.6 x 4.5	9559-00-00
58	Washer, Flat, $\phi 2.6 \times \phi 7 \times t 0.8$	9324-00-00
59	Holder, Loading	8000-03-13
60	Screw, Sens, M2 x 4	9077-00-00
61	Guide, Tape	8000-03-14
62	Flange, Tape Guide	8000-03-18
63	Flange (B), Tape Guide	8000-03-20
64	Spring, Tape Guide	8000-03-15
65	Nut, M3	9453-00-00
66	Cap, Guide	8000-03-19
67	Nut, Tracking Adjuster	8000-03-16
68	Screw, Sens, M3 x 6	9107-00-00
69	Rollerpost, SIS	8000-03-33
70-76	Not used	
77	Flange (C), Tape Guide	8000-03-28
78	Flange (D), Tape Guide	8000-03-29
79	Nut, Nylon, M3	9953-00-00
80	Not used	
LOADING DRIVE		
81	Plate (L) Ass'y, Loading (Consists of 82-85)	8000-04-301
82	Rivet, Loading Plate (L)	8000-04-501
83	Roller, Back Tension Return	8000-04-25
84	E-Ring, $\phi 1.5$	9500-00-00

Ref. No.	Description	Parts No.
86	85 Spring, Loading Plate Plate (R) Ass'y Loading (Consists of 87-88)	8000-04-23 8000-04-302
87	Rivet, Loading Plate (R)	8000-04-502
88	Spring, Loading Plate	8000-04-23
89	Drive Gear (L) Ass'y (Consists of 90-92)	8000-04-303
90	Gear (A), L Drive	8000-04-13
91	Gear (B), Ass'y, L Drive	8000-04-304
92	Gear Spring, L Drive	8000-04-16
93	Washer, Flat, $\phi 4 \times \phi 16 \times t 0.6$	9956-00-00
94	Gear, Control	8000-04-20
95	Plate, Gang	8000-04-21
96	Gear, Gang	8000-04-22
97	Gear, Joint(B)	8000-04-19
98	Gear, Joint(A)	8000-04-18
99	Gear, Guide	8000-04-09
100	Washer, Flat, $\phi 2.5 \times \phi 14 \times t 1$	9955-00-00
101	E-Ring, $\phi 2.0$	9502-00-00
102	Roller, Guide	8000-04-10
103	Washer, Flat, $\phi 2.5 \times \phi 10 \times t 1$	9954-00-00
104	Screw, Small, M2.6 x 4	9038-00-00
105	E-Ring, $\phi 3.2$	9506-00-00
106	E-Ring, $\phi 2.3$	9503-00-00
107	E-Ring, $\phi 2.5$	9504-00-00
108-140	Not used	
141	Head Base Ass'y (Consists of 142-150)	8000-06-310
142	Head, Audio/Control	6204-15-02
143	Rivet, Head Base	8000-06-501
144	Screw, Azimuth SP	8000-06-26
145	Not used	
146	Spring, Azimuth	8000-06-04
147	Screw, Small, M2.6 x 7	9041-00-00
148	Screw, Set with Hexagon Socket, 3 x 5	9950-00-00
149	Collar, Adjust	8000-06-05
150	Nut, Nylon, M3	9953-00-00
151	Spring, Head	8000-06-03
152	Bracket Ass'y, MD PCB (Consists of 153-155)	8000-06-316
153	Bracket, MD PCB	8000-06-18
154	PCB Ass'y, MD	8000-06-315
155	Screw, Sens, M2 x 5	9078-00-00
156	Screw, Sens, M2.6 x 5	9097-00-00
157-170	Not used	
FEH		
171	Plate Ass'y, Impedance Roller (Consists of 172-175, 178)	8000-07-303
172	Rivet, Impedance	8000-07-501
173	Roller, Impedance	8000-07-05
174	Washer, Polyslider, $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
175	Washer, Polyslider, $\phi 2.1 \times \phi 5 \times t 0.3$	9747-00-00
176	Head, Full Erase	6204-15-03
177	FE Plate Spring	8000-07-04
178	E-Ring, $\phi 3.0$	9505-00-00
179	Screw, Camera, M2 x 3	9550-00-00
180-190	Not used	
TENSION ARM		
191	Tension Arm Ass'y (Consists of 192-196)	8000-08-302
192	Brake Ass'y (Consists of 193-194)	8000-08-303
193	Flat Ass'y, Back Tension	8000-08-301
194	Screw, P-Tight, M2 x 8	9675-00-00
195	Arm Ass'y, Tension Arm	8000-08-501
196	E-Ring, $\phi 1.5$	9500-00-00
197	Plate, Back Tension Adjusting	8000-08-13
198	Spring, Tension Arm	8000-08-14
199	Screw, Sens, M2.6 x 5	9097-00-00
200	Washer, Flat, $\phi 2.6 \times \phi 7 \times t 0.8$	9324-00-00
201	Arm, Back Tension Return	8000-08-10
202	Collar	8000-08-12
203	Screw, Sens, Camera, M2.6 x 4.5	9999-18-01
204	E-Ring, $\phi 2.0$	9502-00-00
205	E-Ring, $\phi 2.0$	9502-00-00
206	Lever, Back Tension Return	8000-08-11
207	E-Ring, $\phi 2.5$	9504-00-00
208	Guide, Tension	8000-08-17
209	Support (B), Back Tension	8000-08-16
210	Screw, C-Tight, M2.6 x 5	9192-00-00

Ref. No.	Description	Parts No.
211	Screw, C-Tight, M3 × 5	9202-00-00
212-220	Not used	
PINCH ROLLER		
221	Pinch Roller Ass'y (Consists of 222-224)	8000-09-306
	222 Screw, M2.6 × 4	9038-00-00
	223 Rivet, Pinch Roller Arm	8000-09-504
	224 Pinch Roller A	8000-09-22
225	E-Ring, $\phi 2.3$	9503-00-00
226	Toggle Arm Ass'y (Consists of 227-229)	8000-09-305
	227 Rivet, Toggle Arm	8000-09-505
	228 Spring (B), Pinch Roller	8000-09-05
	229 Spring (A), Pinch Roller	8000-09-04
230	Collar	8000-08-12
231	Screw, C-Tight M2.6 × 5	9192-00-00
232	Plate Ass'y, Pressure (Consists of 233-237)	8000-09-303
	233 Rivet, Pressure Plate	8000-09-503
	234 Roller, Pressure	8000-09-08
	235 E-Ring, $\phi 2.0$	9502-00-00
	236 Collar	8000-08-12
	237 Screw, C-Tight, M2.6 × 5	9192-00-00
238	Actuator, Pressure Arm	8000-09-20
239	Support, Tape	8000-09-17
240	Shaft, Tape Support	8000-09-18
241	Spring, Tape Support	8000-09-19
242	Nut, Self	8000-09-21
243-250	Not used	
SUB CHASSIS		
251	Sub Chassis Ass'y (Consists of 252-259)	8000-10-306
	252 Rivet, Sub Chassis	8000-10-507
	253 Arm, Change Plate Action	8000-10-17
	254 E-Ring, $\phi 3$	9505-00-00
	255 Spring, Change Plate	8000-10-15
	256 Spring, Change Plate Action Arm	8000-10-19
	257 Rivet, Actuator Switch	8000-10-506
	258 Collar	8000-08-12
	259 Screw, Sens, M2.6 × 5	9097-00-00
260-262	Not used	
263	Screw, Sens, M2.6 × 5	9097-00-00
264	Screw, Sens, M2 × 6	9079-00-00
265	Screw, Camera, Flat Head, M2.6 × 5	9564-00-00
266-280	Not used	
REEL		
281	Reel Ass'y, Supply	8000-11-301
282	Reel Ass'y, Take-up (B)	8000-11-310
283	Washer, Polyslider, $\phi 2.1 \times \phi 5 \times t 0.5$	9876-00-00
284	Washer, $\phi 3.1 \times \phi 6 \times t 0.6$	9969-00-00
285	Bracket Ass'y, Reel Sensor (Consists of 286-288)	8000-11-308
	286 PCB Ass'y, Reel Sensor	8000-11-306
	287 Bracket (B), Reel Sensor	8000-11-17
	288 Screw, Camera, M2.6 × 2.5	9555-00-00
289	Screw, Sens, M2.6 × 4	9096-00-00
290	Screw, M2.6 × 7	9041-00-00
291	Not used	
292	PCB Ass'y, Reel Sensor Connector	8000-11-307
293	Screw, Sens, M2.6 × 4	9096-00-00
294	Not used	
REEL DRIVE		
295	Pulley, Wind	8000-12-308
296-300	Not used	
301	Ass'y, Clutch	8000-12-304
302	Gear Holder Ass'y (Consists of 303-305, 314-320)	8000-12-305
	303 Rivet, Gear Holder	8000-12-503
	304 Gear, R Drive	8000-12-19
	305 Washer, Polyslider $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
	314 Gear (B) Ass'y, Return	8000-12-306
	315 Drum Ass'y, Return	8000-12-307
	316 E-Ring, $\phi 1.5$	9500-00-00
	317 Arm, Return	8000-12-18
	318 Arm Collar, Return	8000-12-26
	319 Screw, Camera M2 × 3	9562-00-00
	320 Sprig, Return	8000-12-25

Ref. No.	Description	Parts No.
306	Gear (p)	8000-12-07
307	Gear, FF	8000-12-08
308	Washer, $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
309	Not used	
310	Screw, Sens, M2 × 5	9078-00-00
311	Clutch Ass'y, FF	8000-12-309
312	Washer, $\phi 3.6 \times \phi 6 \times t 0.1$	9798-00-00
313	Washer, Polyslider $\phi 2.6 \times \phi 6 \times t 0.5$	9884-00-00
BRAKE		
321	Plate, Switching	8000-13-503
322	Brake Ass'y, Supply Reel (Consists of 323-325)	8000-13-301
	323 Main Brake Ass'y, Supply Reel	8000-13-501
	324 Spring, Brake Arm	8000-13-09
	325 Shoe B, Brake	8000-13-26
326	E-Ring, $\phi 2.3$	9503-00-00
327	Spring, Brake Main	8000-13-10
328	Brake Ass'y, Take-up Reel (Consists of 329-331)	8000-13-302
	329 Main Brake Ass'y, Take-up Reel	8000-13-502
	330 Spring, Brake Arm	8000-13-09
	331 Shoe B, Brake	8000-13-26
332	E-Ring, $\phi 2.3$	9503-00-00
333	Arm, Take-up Brake Actuator	8000-13-34
334	Collar	8000-08-12
335	Screw, Sens, M2.6 × 5	9097-00-00
336	Arm Ass'y, Left Brake (Consists of 337-338)	8000-13-304
	337 Arm, Left Brake (B)	8000-13-33
	338 Shoe, Brake	8000-13-11
339	Spring LB Arm	8000-13-18
340	E-Ring, $\phi 2.3$	9503-00-00
341	Arm, Right Brake Actuator	8000-13-21
342	Arm, Left Brake Actuator	8000-13-20
343	Spring, Neutral	8000-13-37
344	Collar, Left Brake Actuator Arm	8000-13-29
345	Spring, Left Brake Actuator Arm	8000-13-28
346	W Tans, M2.6 × 11	9970-00-00
347	Crank, Bell	8000-13-23
348	E-Ring, $\phi 2.5$	9504-00-00
349	Plate, Main	8000-13-02
350	Plate, Pull (A)	8000-13-36
351	Collar	8000-08-12
352	Screw, Sens, M2.6 × 5	9097-00-00
353	Brake Ass'y, S Soft	8000-13-305
354	Spring, S Soft Brake	8000-13-16
355	E-Ring, $\phi 2.3$	9503-00-00
356	Arm Ass'y, Back Tension	8000-13-306
357	Spring, Right Brake	8000-13-17
358	Sleeve, Right Brake Arm	8000-13-24
359	E-Ring, $\phi 2.3$	9503-00-00
360	Not used	
PLANGER		
361	Planger Ass'y, Supply (Consists of 362-364)	8000-14-303
	362 Planger Ass'y, Main	8000-14-302
	363 Board, Release Spring	8000-14-06
	364 Screw, Sens, M2 × 4	9077-00-00
365	Planger	8000-14-04
366	Screw, Sens, M2.6 × 5	9097-00-00
367	Holer, Planger	8000-10-23
368	Screw, Sens, M2.6 × 4	9096-00-00
369-370	Not used	
FLYWHEEL		
371	Capstan Ass'y, Flywheel	8000-15-29
372	FL Plate Ass'y	8000-15-304
373	Belt, Main	8000-15-26
374-375	Not used	
376	Washer, Nylon $\phi 3.6 \times \phi 10 \times t 0.5$	9957-00-00
377	Capstan Metal	8000-15-24
378	Screw, Flat, M2.6 × 6	9684-00-00
379	Not used	
380	Screw, C-Tight, M3 × 5	9202-00-00
381	Washer, $\phi 3.43 \times \phi 5 \times t 0.5$	9860-00-00
382-391	Not used	
MOTOR		
392	Motor Ass'y, Capstan	8000-16-303
393	Belt, Drive	8000-16-07

Ref. No.	Description	Parts No.
394	Belt, Joint	8000-16-08
395	Screw, Sens, M3 X 4	9105-00-00
396	Pulley, Joint	8000-16-304
397	Washer, Polyslider, $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
398	Washer, Lumilar, $\phi 2.1 \times \phi 5 \times t 0.5$	9920-00-00
399-460	Not used	
SENSOR		
461	Not used	
462	PCB Ass'y, Lamp Holder	8000-18-309
463	Not used	
464	Not used	
465	Not used	
466	Not used	
467	Sensor, Dew	6808-00-01
468	Screw, Sens, M3 X 4	9105-00-00
469-649	Not used	
650	Tape Loading Motor Ass'y (Consists of 651-671)	8000-21-302
651	Motor with Pulley	8000-21-303
652	Motor Bracket (B), Tape Loading	8000-21-27
653	TL Worm Gear	8000-21-304
654	Mode Switch Ass'y	8000-21-305
655	Screw, Sens, M2.6 X 5	9097-00-00
656	Holder (A), TL Worm Gear	8000-21-32
657	Holder (B), TL Worm Gear	8000-21-33
658	Pulley, TL	8000-21-40
659	Belt, TL	8000-21-39
660-662	Not used	
663	Actuator, Angle Switch	8000-21-28
664	Collar, Actuator Angle	8000-21-12
665	Screw, Sens, M2 X 4	9077-00-00
666	Actuator, M Switch	8000-21-501
667	Not used	
668	Screw Sens, M3 X 4	9105-00-00
669	Screw C-Tight, M2.6 X 5	9192-00-00
670	Washer, $\phi 2.2 \times \phi 3.8 \times t 0.2$	9939-00-00
671	E-Ring, $\phi 1.2$	9499-00-00
672-699	Not used	
700	Front Loading Ass'y (Consists of 701-819)	8000-22-301
701	Bracket Ass'y, Loading Motor (Consists of 702-716, 819)	8000-22-302
702	Motor Ass'y, Loading	8000-22-303
703	PCB Ass'y, Loading Motor	8000-22-304
704	Rivet, Motor Bracket	8000-22-501
705	Gear, Worm	8000-22-305
706	PCB Ass'y, Sensor (R)	8000-22-320
707-709	Not used	
710	Lever (A), Switch	8000-22-28
711	Lever (B), Switch	8000-22-29
712	Holder, Worm Gear	8000-22-27
713	Not used	
714	Washer, Polyslider, $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
715	Screw, Sens, M2 X 5	9078-00-00
716	Belt, Front Loading	8000-22-64
717	Bracket (B), Motor	8000-22-70
819	Screw, Sens, Camera, M2.6 X 4.5	9999-18-01
718	Not used	
719	Record Switch Ass'y	8000-22-324
720	Screw, Sens, M2 X 4	9077-00-00
721	Cassette Holder Ass'y (Consists of 722-727)	8000-22-308
722	Holder, Cassette	8000-22-03
723	Plate, Slide	8000-22-13
724	Lock Plate (R)	8000-22-12
725	Collar	8000-08-12
726	Spring, Lock Plate	8000-22-43
727	Screw, Camera, M2.6 X 3	9968-00-00
728-729	Not used	
730	Front Bracket Ass'y (Consists of 731-733)	8000-22-309
731	Bracket, Front	8000-22-06
732	Guide (R), Tape	8000-19-25
733	Guide (L), Tape	8000-19-26
734-744	Not used	
745	Side Plate (R) Ass'y (Consists of 746-756)	8000-22-310
746	Plate (R), Side	8000-22-502
747	Pressure, Cassette	8000-19-11
748	Not used	
749	Screw, Camera, M2.3 X 2	9833-00-00
750	Lever, Open	8000-22-25
751	Spring, Open Lever	8000-22-44
752	Collar, Open Lever	8000-22-42

Ref. No.	Description	Parts No.
753	Screw, Camera, M2 X 4	9967-00-00
754	Lever, Rock Cancel	8000-22-16
755	Roller, Guide	8000-22-23
756	Washer, Polyslider, $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
757	Stay, Top	8000-22-65
758-759	Not used	
760	Side Plate (L) Ass'y (Consists of 761-770)	8000-22-311
761	Plate (L), Side	8000-22-503
762	Pressure, Cassette	8000-19-11
763	Not used	
764	Screw, Camera, M2.3 X 2	9833-00-00
765	Lock Plate (L)	8000-22-66
766	Spring, Lock Plate (L)	8000-19-65
767	Collar, Lock Plate	8000-19-63
768	Screw, Camera, M2 X 2.5	9966-00-00
769	Roller, Guide	8000-22-23
770	Washer, Polyslider, $\phi 1.6 \times \phi 3.8 \times t 0.3$	9743-00-00
771-774	Not used	
775	Housing Bracket (R) Ass'y (Consists of 776-787)	8000-22-312
776	Bracket (R), Housing	8000-22-504
777	Wormwheel Ass'y (Consists of 778-780)	8000-22-313
778	Wormwheel	8000-22-20
779	Gear, Friction	8000-22-21
780	Spring, Friction	8000-22-48
781	Lift Gear (R) Ass'y (Consists of 782-784)	8000-22-314
782	Gear (R), Lift	8000-22-15
783	Arm, Lift	8000-22-11
784	Spring, Lift Gear	8000-22-45
785	Guide, Open Lever	8000-22-26
786	Sleeve, Guide	8000-22-24
787	E-Ring, $\phi 2.5$	9504-00-00
788-789	Not used	
790	Housing Bracket (L) Ass'y (Consists of 791-804)	8000-22-315
791	Bracket (L), Housing	8000-22-505
792	PCB Ass'y (L), Sensor	8000-22-322
793-795	Not used	
796	Lift Gear (L) Ass'y (Consists of 797-799)	8000-22-318
797	Gear (L), Lift	8000-22-14
798	Arm, Lift	8000-22-11
799	Spring, Lift Gear	8000-22-45
800	Lever, Lift	8000-22-22
801	Spring, Lift Lever	8000-22-47
802	Sleeve, Guide	8000-22-24
803	E-Ring, $\phi 2.5$	9504-00-00
804	Screw, Sens, M2.6 X 6	9098-00-00
805-809	Not used	
810	Bracket, Rear	8000-22-08
811	Plate, Upper	8000-22-07
812	Shaft, Synchronize	8000-22-46
813	Gear (A), Synchronize	8000-22-34
814	E-Ring, $\phi 2.5$	9504-00-00
815	Screw, Sens, M2.6 X 4	9096-00-00
816	Screw, Camera, M2.6 X 3	9556-00-00
817	Screw, Camera, M2.3 X 2.5	9991-00-00
818	Screw, C-Tight, M3 X 5	9202-00-00

MECHANICAL PARTS LIST (CABINET)

Ref. No	Description	Parts No.
A-1X	Front Ass'y consists of following	6A50189
A-1	Front Panel Ass'y (Non-repairable)	6A50189X
	Front	6C50151
	Button, Mode (STOP, PLAY, REW, F.FWD, PAUSE/STILL)	6D50824
	Button, Eject	6D50777
	Button, Power	6D50778
	Button, Counter (DATE COUNTER, RESET, MEMORY, QTR)	6D50785
	Button, Record	6D50779
	Button, Channel Up	6D50835
	Button, Channel Down	6D50836
	Button, Base	6N50140
A-2	Door, Timer	6D50825
A-3	Plate, Counter	6E50684
A-4	Plate, Timer	6E50646
A-5	Filter, Remote Control	6E50644
A-12	Label Tuner	6E50668
A-14	Badge	6E50685
A-6	Case, Top	6G50067
A-7	Panel Bottom	6G50053
A-8	Jack Board	6C50159
A-9	Foot	6E50453
A-10	Cassette Door Ass'y	6A50223
A-11	Label Type	6E50736
A-13	Plate, Jack Board	6P50128
B1-1	Deck Ass'y (See Deck List)	P306SRP
B2-1	Cabinet, Main	6C50148
B2-2	Holder, Deck Angle	6S50323
B2-3	Holder, Supporter	6S50326
B2-4	Holder, Deck	6S50208
B2-5	Holder, Cassette Door	6L50062
B2-6	Ground Plate	6S50319
B2-7	Stopper Holder, AC Cord	6S50286
B2-8	Ground Plate, Control PCB	6S50299
B2-9	Heatsink	6S50317
B2-10	Ground Plate	6S50212
L-1	Screw, P-Tight, Brazier Head, Flange M3×12 (for Jack Board Ass'y—2pcs.)	GCKP312
L-2	Screw, P-Tight, Bind Head M3×10 (for Jack Board Ass'y—1pc.) (for Skirt Jack—2pcs.) (for Head AMP PCB—1pc.) (for Holder, Supporter—2pcs.)	GEMP310
L-3	Screw, P-Tight, Bind Head M3×12 (for Main PCB—3pcs.)	GEMP312
L-4	Screw, P-Tight, Brazier, Flange M3×12 (for Deck Ass'y—5pcs.)	GOMP312
L-5	Screw, P-Tight, Bind Head M4×12 (for Heatsink—2pcs.)	GEMP412
L-7	Screw, S-Tight, Bind Head M3 ×6 (for Holder, Deck—1pc.) (for WPS PCB—2pcs.)	GMS306
L-8	Screw, CE-Tight M4 ×8 (for Transformer—2pcs.)	GZMC408
L-9	Screw, Sems, Pan Head M3 ×5 (for Holder, Cassette Door—1pc.) (for Ground Plate—1pc.)	GM3305
L-10	Screw, Tapping, Bind Head M3×10 (for Transistors—4pcs.) (for IC—1pc.) (for Power Supply PCB—1pc.)	DM1310
Hardware Kits		
L-2	Screw, P-Tight, Bind Head 3×10 (for Front Ass'y—3pcs.) (for Panel, Bottom—7pcs.)	GEMP310
L-6	Screw, P-Tight, Bind Head 4×12 (for Case, Top—3pcs.)	GKMP412
Accessory		
	RF Cord	1750665 or 1750967
	Remote Control Box	1812097
	Owner's Manual	7E50381

(R7110CA)

